COMMERCIAL FERTILIZER

CONSOLIDATED WITH THE FERTILIZER GREEN BOOK

EARLY *top-dressing* means EXTRA YIELDS

THIS ILLUSTRATION AND HEADLINE are from the latest in a series of Barrett advertisements in farm magazines.

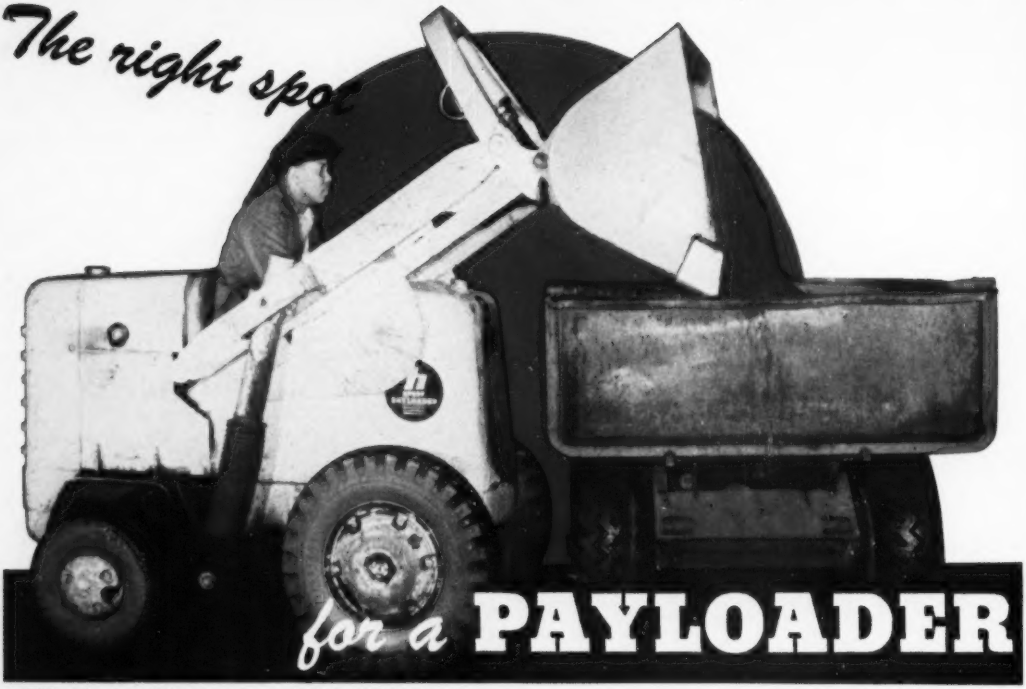
For small grains, Barrett advertising recommends complete fertilizers at fall seeding followed by nitrogen top-dressing in the late winter or early spring. Thus Barrett advertising helps you to promote a balanced fertilizer program.

We trust that this campaign is helpful in increasing your sales of complete fertilizers, ARCADIAN*, *the American* Nitrate of Soda, and A-N-L* Nitrogen Fertilizer.

THE BARRETT DIVISION
ALLIED CHEMICAL & DYE CORPORATION
NEW YORK 6, N. Y. • RICHMOND 19, VA. • HOPEWELL, VA. • ATLANTA 3, GA.
COLUMBIA 1, S. C. • SOUTH POINT, OHIO • SAN FRANCISCO 3, CALIF.

THE ELEMENT THAT MAKES PLANTS GROW

The right spot for a PAYLOADER



What is the right spot for a PAYLOADER? It's any place inside your buildings or in the yard where bulk materials are being handled by laborious or other obsolete methods. Thousands of these special tractor-shovels are in "right spots" *today* cutting costs, solving manpower shortages and increasing output.

PAYLOADERS are able to pay for themselves in a few months because they are designed for the specific job of handling bulk materials of all kinds — loading, unloading, scooping, lifting, carrying, dumping and spreading. Outstanding reasons for the performance and acceptance of PAYLOADERS include: short, compact, space-saving design; multiple reverse speeds; large pneumatic tires that permit operation indoors and outdoors . . . on paved or unpaved areas; simple, easy operation; complete hydraulic bucket control.

The 12 cu. ft. model HA shown is an outstanding box car unloader. It is the smallest of six PAYLOADER sizes which range up to 1½ cu. yd. bucket capacity. Every PAYLOADER is backed by 30 years of manufacturing experience and by a world-wide Distributor service organization. The Frank G. Hough Co., 702 Sunnyside Avenue, Libertyville, Illinois.

- Unload box cars.
- Dig and carry fertilizer, chemicals, other bulk materials.
- Clean up gangways, aisles and other areas.
- Load and unload trucks.
- Load box cars.
- Feed conveyors, elevators, hoppers, mixers.
- Charge mullers, tumbling barrels.
- Lift-haul-push-pull.
- Stockpile coal, coke.
- Remove snow.

Write for literature on PAYLOADERS and the name of your Hough Distributor. He'll be glad to help you find the "right spot" for the right size of PAYLOADER in your operations. No obligation.

PAYLOADER®

THE FRANK G. HOUGH CO. • *Since 1920*

LION provides one-stop nitrogen service to Southern fertilizer manufacturers

Lion Anhydrous Ammonia — Manufactured in Lion's modern plant to an 82.25% nitrogen content under accurate chemical control, the uniformity and high quality of this basic product are assured.

Lion Aqua Ammonia — This product is available to manufacturers for use in the formulation of mixed fertilizers or for sale as direct application material. Normally about 30% ammonia, its content can be controlled by order to suit your needs.

Lion Nitrogen Fertilizer Solutions — Made specifically for the manufacturing of mixed fertilizers, these products supply both ammonia nitrogen and nitrate nitrogen in the ratios desired. They are easily handled and available in three types designed for varying weather conditions, and for formula requirements in the production of fertilizers that cure rapidly, store well and drill evenly.

Lion Ammonium Nitrate Fertilizer — The improved spherical white pellets in this product contain a guaranteed minimum of 33.5% nitrogen. They flow freely, resist caking and store much better. Lion Ammonium Nitrate Fertilizer is shipped in 100-pound, 6-ply bags with two moisture-proof asphalt layers.

Lion Sulphate of Ammonia — This new, superior-type sulphate is guaranteed to contain a minimum of 21% nitrogen. Through special conditioning of the larger crystals, moisture and free acid content is greatly reduced. These factors, together with the special coating applied, make for greater resistance to caking in shipment or in storage. This product flows freely. It is shipped in bulk and in 100-pound, 6-ply bags laminated with asphalt.

"Serving Southern States"

Technical advice and assistance to fertilizer manufacturers in solving their manufacturing problems is available for the asking . . . just write.

LION OIL COMPANY

Chemical Division • El Dorado, Arkansas

Get ready now for big spring business

ORDER YOUR U·S·S AMMONIUM SULPHATE FOR EARLY MIXING

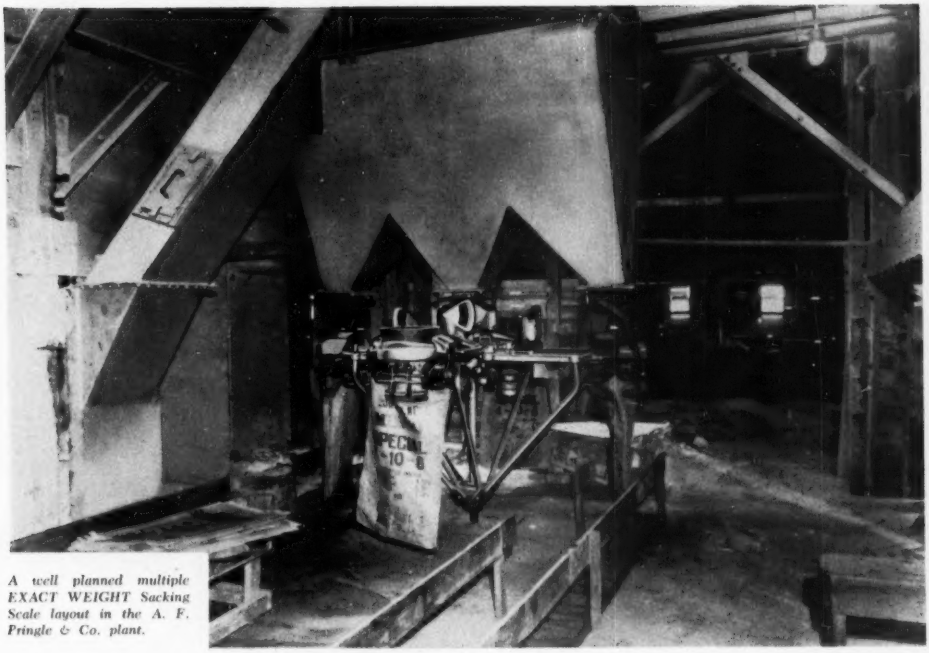
● This spring offer your customers the most effective high-analysis fertilizers they can obtain anywhere. Give them complete fertilizers that derive a major part of their nitrogen content from U·S·S Ammonium Sulphate.

Fertilizers that contain U·S·S Ammonium Sulphate are blended for maximum efficiency. Their nitrogen won't leach out in spring rains, yet converts to readily available form in the warm, moist growing season. U·S·S Ammonium Sulphate is dry and free-running . . . it mixes easily with other complete fertilizer ingredients . . . isn't highly corrosive to drills or other distributing equipment.

For complete information and the address of the sales office nearest you, write to United States Steel Company, 525 William Penn Place, Pittsburgh 30, Pa.

U·S·S AMMONIUM SULPHATE

UNITED STATES STEEL



A well planned multiple EXACT WEIGHT Sacking Scale layout in the A. F. Fringle & Co. plant.

Your Fringe Costs – How Much?

Your fringe costs! How much do they add to your present production line costs? This added overhead is ever present when (1) hourly paid labor is not at bench or station in actual productive effort (2) when equipment is inadequate or does not deliver as a smooth efficient operation should. On the labor side with 50% of all productive labor occupied in handling and packaging fringe labor costs can be the first threat to profits. On the equipment side the second threat can be controlled by sound plans, plus equipment to do the job and timing of the production line to fit the personnel. When checkweighing is involved the type of weighing units are vital too. Use EXACT WEIGHT industrial scales for accuracy, adaptability, dependability, correct capacity and speed of operation. Remember nothing will cut fringe costs more than the right scales in the right place. Their capacity to save time, money, product and labor have been proven numberless times by production-minded engineers everywhere. Write for full details for your plant.

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in all Principal Cities
from Coast to Coast
and Canada.

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Industrial Precision

THE EXACT WEIGHT SCALE COMPANY

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COMMERCIAL FERTILIZER

ESTABLISHED 1910

December, 1951

Vol. 83, No. 6

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ERNEST H. ABERNETHY, *President*

BRUCE MORAN, *Editor* V. T. CRENSHAW, *Business Manager*

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Chicago Representative
ELON A. ABERNETHY
1323 S. Michigan Ave.—Room 400
Phone Harrison 7-3655

West Coast Representative
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2267 W. 24th St., Los Angeles, Cal.
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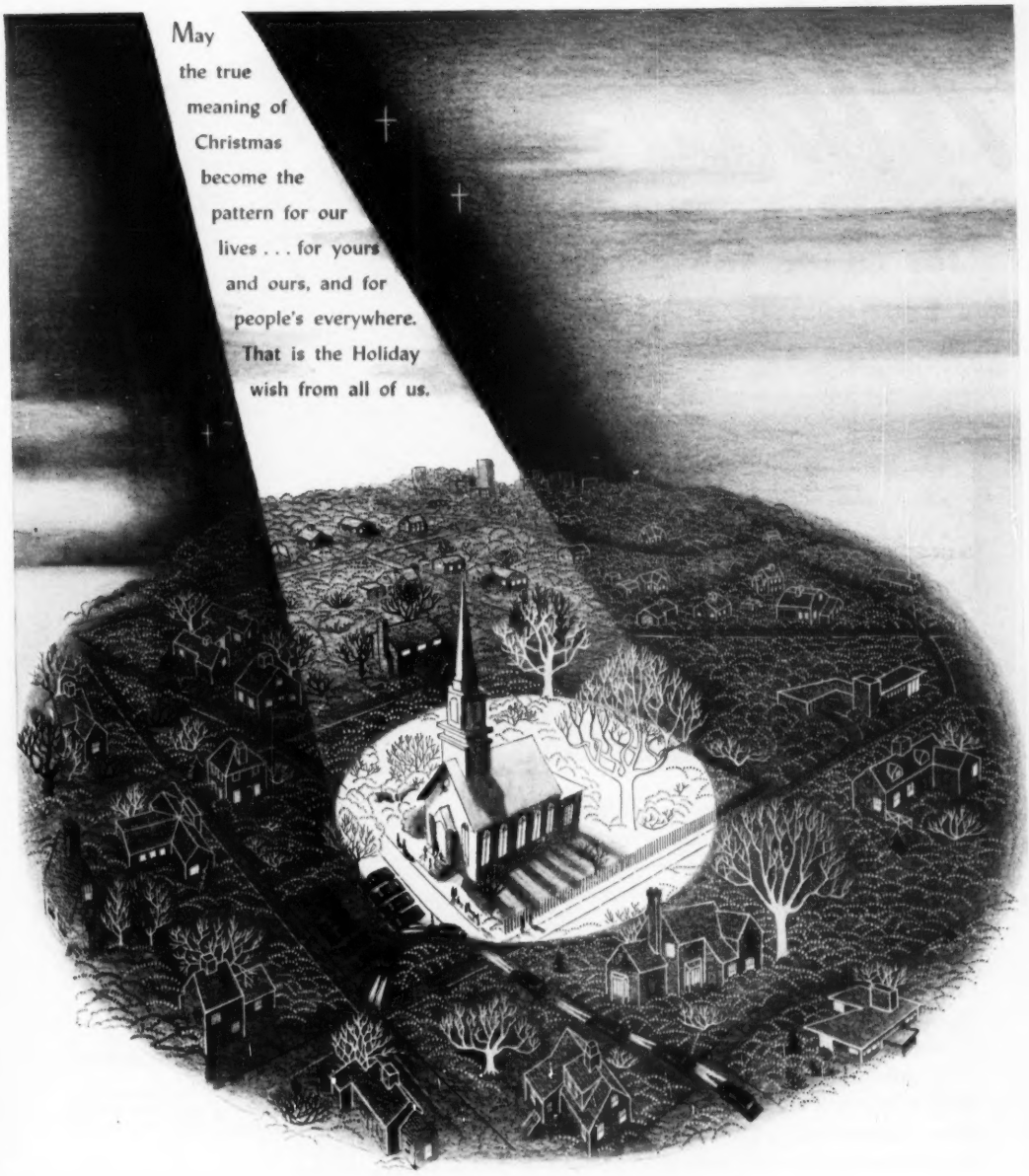
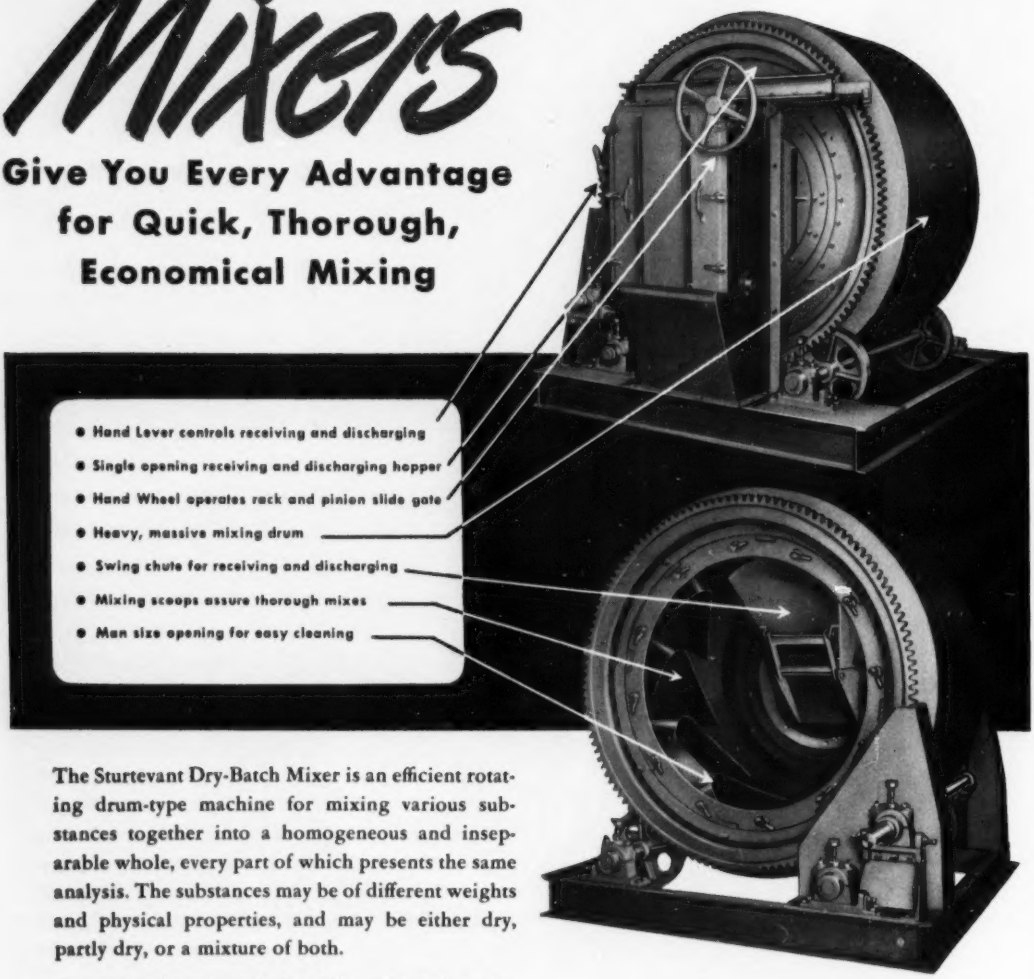

May
the true
meaning of
Christmas
become the
pattern for our
lives . . . for yours
and ours, and for
people's everywhere.
That is the Holiday
wish from all of us.

Bemis

Sturtevant Dry Batch

Mixers

Give You Every Advantage for Quick, Thorough, Economical Mixing


• Hand Lever controls receiving and discharging
• Single opening receiving and discharging hopper
• Hand Wheel operates rack and pinion slide gate
• Heavy, massive mixing drum
• Swing chute for receiving and discharging
• Mixing scoops assure thorough mixes
• Man size opening for easy cleaning

The Sturtevant Dry-Batch Mixer is an efficient rotating drum-type machine for mixing various substances together into a homogeneous and inseparable whole, every part of which presents the same analysis. The substances may be of different weights and physical properties, and may be either dry, partly dry, or a mixture of both.

Because of the unique design of its mixing chamber, and the 4-way mixing action which brings two or more substances together, the Sturtevant Dry-Batch Mixer does a more rapid mixing job than other machines and, at the same time, it is complete and thorough in every particular.

Write for bulletin today.

Compare These Advantages

- Only one lever controls both receiving and discharging for simplicity of operation. Hand wheel operates rack and pinion slide at feed opening.
- 4-way mixing action speeds production...assures thorough blends.
- "Open-door" accessibility permits easy, fast, thorough, cleaning.
- Single aperture drum for both intake and discharge.
- Unusually efficient scoops pick up materials to effect thorough mixing as drum revolves.
- 5 models . . . a size for every mixing job . . . smallest size mixes up to 7½ tons per hour . . . largest size up to 75 tons per hour.

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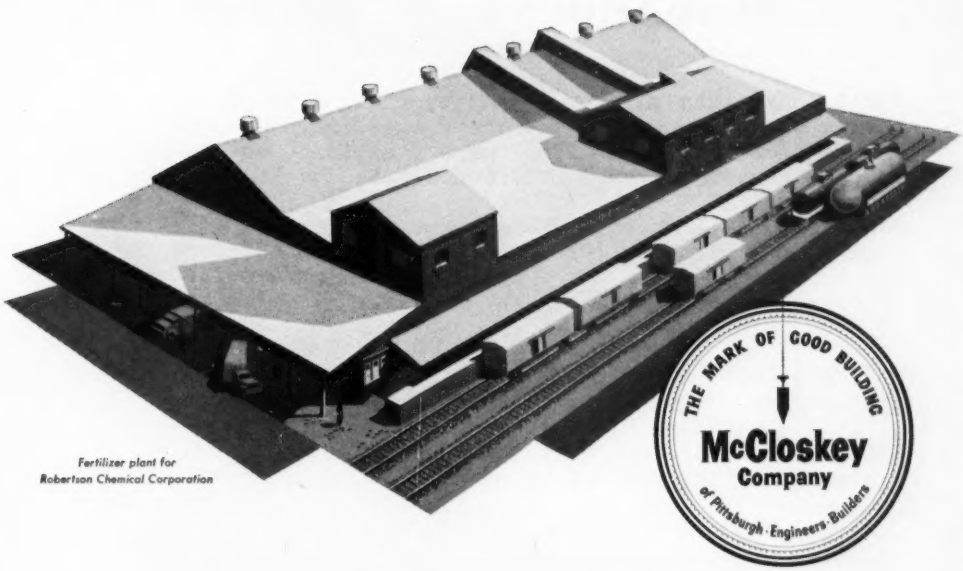

Fertilizer plant for Robertson Chemical Corporation

You Get Sound Design, Efficient Construction With McCloskey Fertilizer Plants

The design of your plant is based upon sound engineering principles when you retain McCloskey to plan and erect your new fertilizer processing unit. For, back of "The Mark of Good Building" is the experience gained in designing a number of fertilizer plants which is reflected in our modern approach to the many specialized problems involved in such an operation.

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of Pittsburgh

Engineers - Builders

JUST AROUND THE CORNER

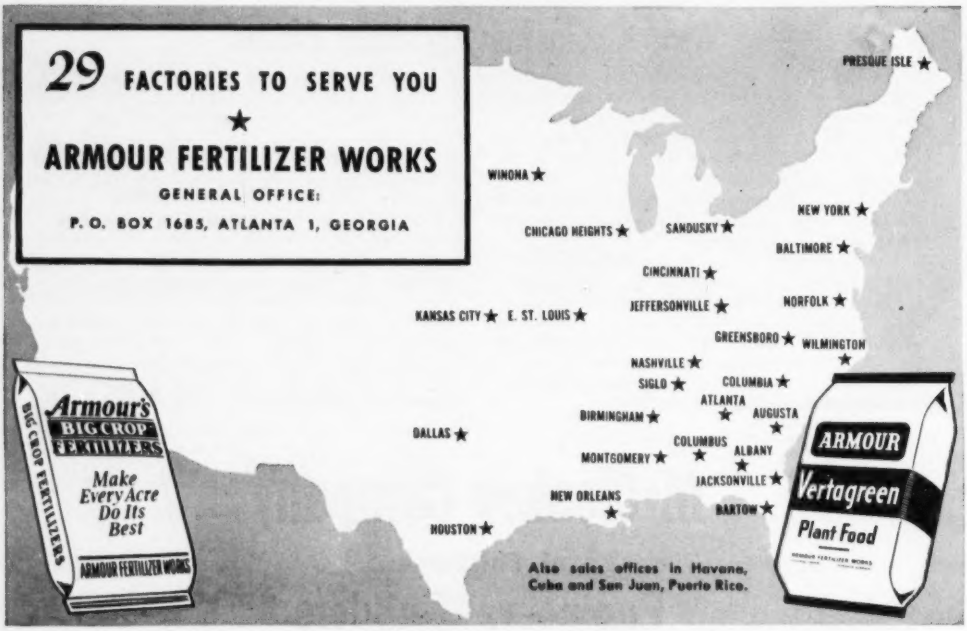
BY VERNON MOUNT

DON'T WORRY when our top brass seems to be revealing things to "the enemy." The enemy knows anyhow. The chances are, statistically, there's at least one Communist in your personal circle of friends. So how could they miss?

EUROPE AND ASIA need to be impressed. They are going to line up on what they guess to be the winning side. And these "revealing interviews" help impress those very impressionable peoples. Without them we have little chance of containing Russia for very long.

POLITICS plays a part, too. Plenty of people are wondering why our war effort seems to progress so slowly when so many billions are being allocated to it. The "leaks" help allay such suspicions...except perhaps among the smart diplomats of Europe, Asia - and Russia.

Yours faithfully, Vernon Mount



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resists acid fumes, smoke, gases, alkalies, heat, cold, moisture, etc.

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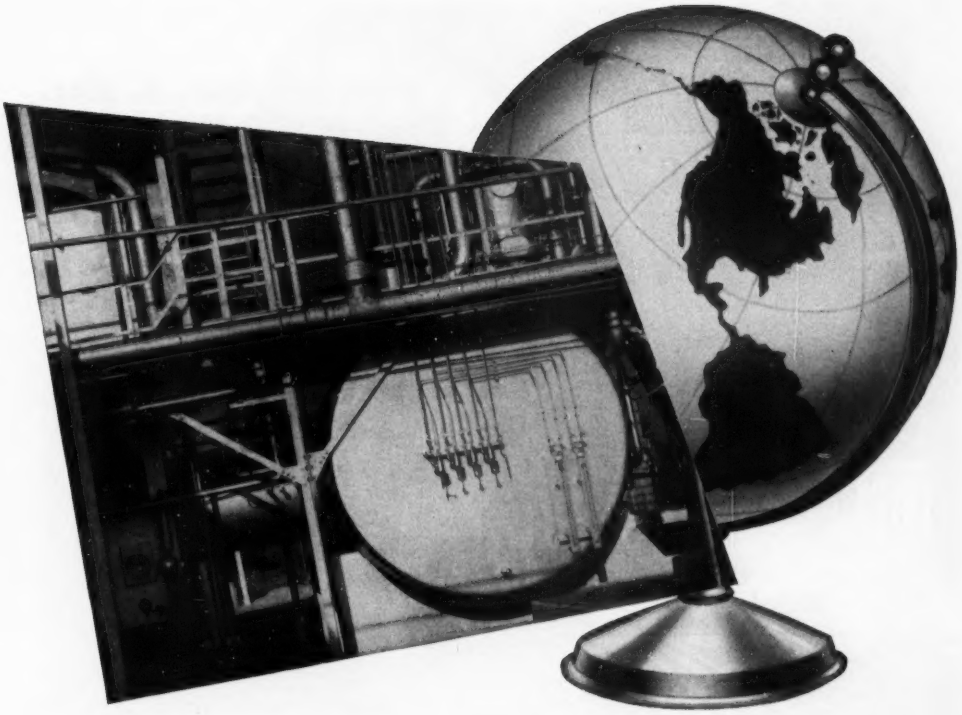

Sulfuric acid for the free world

Approximately 40% of the free world's contact sulfuric acid is produced by Monsanto-designed plants, using Monsanto Vanadium Catalyst. There are more than 250 Monsanto-designed units, using all known raw materials and serving 25 countries.

Monsanto's standard designs for sulfuric acid plants offer the fertilizer industry these advantages:

1. CAPACITY to meet your needs . . . ranging from five to 500 tons of acid (100% H_2SO_4 basis) daily, with no equipment in parallel.

2. FLEXIBILITY in operation from 30% of capacity to more than rated capacity without "blanking off" or other operations that consume time and labor.

3. EFFICIENCY and ECONOMY. Monsanto-designed plants deliver top efficiency with low operating and maintenance costs. They produce by-product steam that gives further savings.

If you are interested in increasing your sulfuric acid production or in taking the initial steps to produce your own supply, you can have the benefit of Monsanto's more than 30 years' experience in the design and operation of sulfuric acid plants.

At your request . . . and without cost or obligation to you or your company . . . a Monsanto engineer will bring you full details. Write, wire or 'phone MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Missouri.

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Monsanto Vanadium Catalyst, produced solely for use in the manufacture of sulfuric acid by the contact method, is highly efficient, rugged, long-lasting. It is used in Monsanto-designed plants in these countries: United States, Canada, Mexico, Cuba, Trinidad, Curacao, N. W. I., Argentina, Brazil, Chile, Peru, United Kingdom, Holland, France, Spain, Italy, Turkey, Egypt, Palestine, Iraq, Iran, India, Sumatra, Borneo, Australia, Japan.

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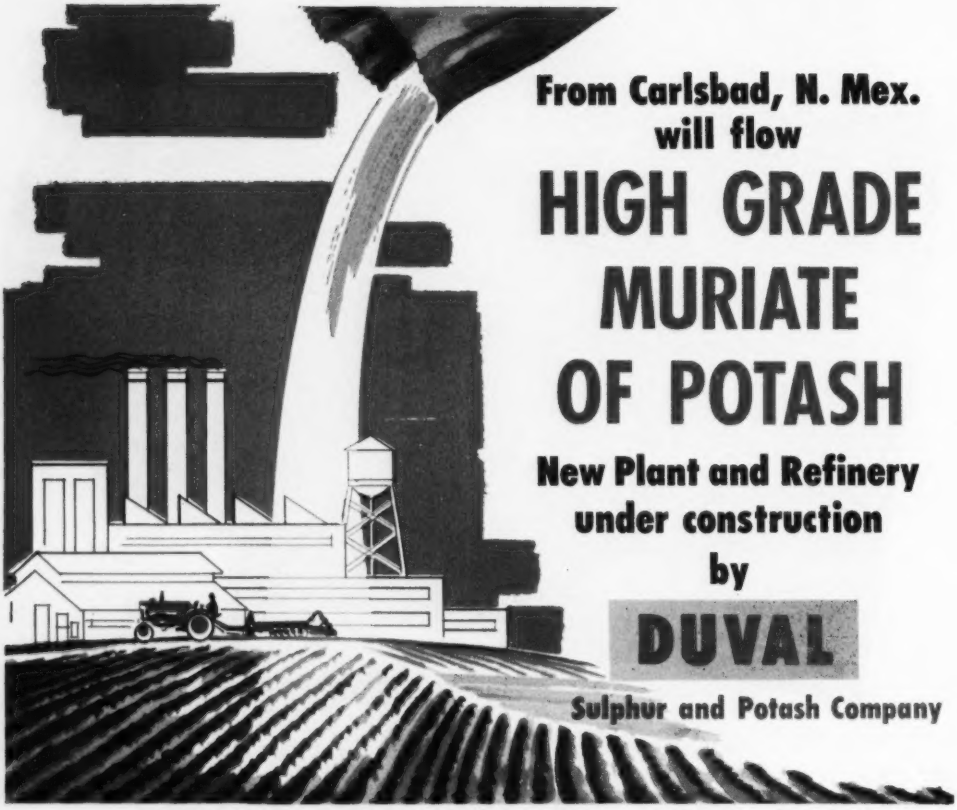
SERVING INDUSTRY... WHICH SERVES MANKIND



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will flow

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DUVAL
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For full details, write today for booklet 280C

"I bought a Model ET Bagpaker® — the one that applies the 'Cushion Stitch' over a dry tape. It makes a neat, strong, sift-free closure. The machine is of welded steel construction throughout — well built — I don't think it will ever wear out. It takes care of up to 15 bags per minute, and only one man is needed to operate it.

"The thing I like best about the Model ET is that it hasn't given me a bit of trouble — no breakdowns or delays. It purrs right along minding its own business. I'm sold on it."

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International Paper Company

BAGPAK DIVISION

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BRANCH OFFICES: Atlanta • Baltimore • Baxter Springs, Kansas • Boston • Chicago • Cleveland • Denver • Los Angeles • New Orleans • Philadelphia • Pittsburgh • St. Louis • San Francisco

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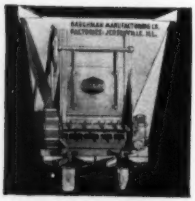
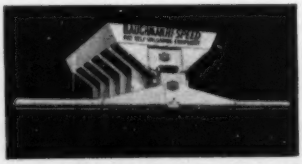


ASK–MS–4

- ALLOY STEEL CONSTRUCTION GIVES MAXIMUM PAYLOAD.
- 13 basic agricultural models, each built to do a better spreading job of materials for which designed.
- Lengths from 9 to 33 ft. (5 to 30 tons capacity) . . 1 to 6 compartments for selective unloading of different materials.
- Available with single or double spreading distributor.
- Four different gear reductions and drag chain flight spacing . . . this controls volume from a few hundred lbs. to 3 or more tons per acre.
- Complete selection of conveyor bottom widths.
- Controlled volume and spread pattern at any truck speed. Oil-sealed clutch and 3-speed transmission regulate rate of discharge from body . . . velocity of spinner remains in constant ratio to engine speed because of direct drive.

ASK–3W–6

FERTILIZER SPRAYER holds the spread to the ground and makes it stick. Covers up to four acres to the mile at 15 miles per hour.



ROCK PHOSPHATE SPREADER ATTACHMENT gives uniform spreads on the level, slopes and hillsides. Designed to prevent materials from packing and crusting.

WRITE FOR FULL INFORMATION & OUR RECOMMENDATIONS. ASK–3–B

BAUGHMAN

BAUGHMAN MANUFACTURING CO., Inc.

912 SHIPMAN ROAD JERSEYVILLE, ILLINOIS

"The Pioneers of the Fertilizer Spreading Industry"

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TRONA
SALTS

Trona
Muriate of Potash

This vitally important ingredient of mixed fertilizer provides the soil nutrient necessary to resist plant diseases and to enhance the productivity of crops. To obtain the best results, specify "Trona" Muriate of Potash . . . made by the pioneer producers in America.

Three Elephant
Agricultural Pentahydrate
Borax

Contains a minimum of 44% B_2O_3 or approximately 121% equivalent Borax. More economical in this concentrated form when used as an addition to fertilizer or for direct application to the soil, to correct a deficiency of Boron. Consult your local County Agent or State Experimental Station.

AMERICAN POTASH & CHEMICAL CORPORATION

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build lasting GOOD WILL *for your product*

It's good business *and* good public relations to give customers something extra for their dollar. You do just that when you use Fulton Cotton Bags, for in every ton of fertilizer (20 bags) there is over 23 yards of quality cotton cloth, which is sought after and in demand for home sewing. Customers not only prefer fertilizer in cotton bags, but also appreciate the extra dividend of valuable sewing material.

Fulton Cotton Bags are easier to handle, too — less subject to tears and snags which incur waste and subsequent profit losses. Step up your own sales with Fulton Quality Cotton Bags — and reap the benefits of consumer preference.

Your nearest Fulton Branch will be happy to work with you in winning new friends and building lasting good will for your product.

Fulton **BAG & COTTON MILLS**

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KANSAS CITY, KANSAS • MINNEAPOLIS • DENVER
LOS ANGELES • NEW YORK CITY, 347 MADISON AVE.

FERTILIZER

In October we published abstracts of the four regional reports of the National Soil and Fertilizer Research Committee. The final, nationwide report has now been issued.

The report of 107 tables gives an up-to-date picture of how nitrogen, phosphorus, potash — and in some cases, lime—is being used on 23 major crops. It indicates what yield increases could be expected if more fertilizer were applied and what decreases would result if fertilizer use were reduced. The estimates, made by soil and crop scientists in each state, are based on thousands of field experiments conducted over the past five years.

Summarizing the findings, the work group calculated how much the yield of each crop would be increased on a nationwide scale if 10 percent more fertilizer were used, 25 percent more, and so on up to three times the current average rates.

For the country as a whole, the greatest opportunities for increasing yields through fertilization are in grain and forage crops, which receive comparatively low rates today.

In the Northeast, for example, the scientists estimate that three times the present average application of 5 pounds of phosphorus oxide an acre would increase pasture yields 10 percent. This would be equivalent to yields from more than an additional million acres under present practices.

In the Midwest, high nitrogen fertilization—now applied only to tobacco—would give spectacular returns in field crops if used with adequate supplies of other fertilizer nutrients. It would produce an additional 600 million bushels of corn, 200 million bushels of wheat—equivalent to present plantings of 14 million acres of each crop.

In the South, scientists estimate the present average yield of 26 bushels of corn an acre represents only a third of the potential production. A combination of heavier fertilization, the use of adapted hybrids, close spacing, and other good management practices would triple yields. This would have meant more than a billion additional bushels from the approximately 24 million acres planted in 1949. It would have required an estimated 1-¼ million tons of nitrogen. Total U. S. consumption of nitrogen in fertilizers in 1949 was little more than a million tons.

In the West, the survey indicates increased fertilization with phosphoric acid and nitrogen would boost hay yields nearly 6 million tons—equivalent to 3 million acres under present practices; wheat yields 48 million bushels or 2,600,000 acres; and corn yields 10 bushels an acre or a total of over 10 million additional bushels.

(Continued on page 45)

It Seems to Me

by BRUCE MORAN

A man who works for a very big bank asked me to lunch with him the other day, to swap viewpoints . . . and he supplied an angle on the matter of buying equipment now which I had not considered before. This man is not really a banker, but studies plants making loan applications to his bank, and I asked about his procedure.

Said he: "The bank has of course, seen the concern's financial statement. So my first step is to check the plant for labor-saving equipment. That is a big factor in my report because the labor market is tight, and is quite likely to be tighter . . ."

There is an angle to think about if you are wondering if it would be wise to invest surplus in equipment, or even considering a capital loan for that purpose. You may be thinking your bank will raise a questioning eyebrow. But maybe it will not. Find out, while still you can get what you need.

INDUSTRY CALENDAR

Date	Organization	Hotel	City
Dec. 19	Radioactive Conference	Plant Industry Station	Beltsville
	1952		
Jan. 10	Georgia PF Soc.	U. of Ga.	Athens
Jan. 18	Fertilizer Mfgrs. Conference	Iowa State	Ames
Jan. 28-29	Pennsylvania Fert. Conf.		State College
Feb. 4-6	Sou. Ag. Workers	Biltmore	Atlanta
June 16-18	NFA	Greenbrier	White Sulphur
June 19-22	APFC	Homestead	Hot Springs
July 9-11	Fertilizer Conference		Pocatello

The Board of Directors and officers of The National Fertilizer Association at the 1951 Fall Meeting, Atlanta, Ga.: left to right, seated: James W. Dean, Knoxville, Tenn.; Fred S. Lodge, Secretary and treasurer, Mary Wallace Nelson, secretary to the president; Russell Coleman, president; J. E. Totman, Baltimore, Md., Chairman of the Board; Louis Ware, Chicago, Ill., Vice Chairman of the board; Weller Noble, Berkeley, Calif., F. N. Bridgers, Wilson, N. C.; standing: E. S. Russell, South Deerfield, Mass.; H. B. Flutz, Miami, Fla., T. W. Allen, Attalla, Ala., John E. Powell, Columbus, Ohio; Walter E. Meeken, Boston, Mass.; Moultrie J. Clement, Pensacola, Fla.; R. L. King, Valdosta, Ga.; C. R. Martin, Dayton, Ohio; L. G. Black, Corning, Ark.; C. T. Prindeville, Chicago, Ill.; L. Graham Campbell, Cranbury, N. J.; J. L. Nichols, Sumter, S. C.; R. D. Martenet, Indianapolis, Ind.; A. A. Schultz, Reading, Pa.; E. A. Goeghegan New Orleans, La.; J. E. Nunnally, Atlanta, Ga.; A. B. Kincaid, Columbia, S. C.; Ralph E. Fraser, Baltimore, Md.; Morton S. Hodgson, Athens, Ga.; John A. Miller, Louisville, Ky.; J. H Epting, Leesville, S. C.; L. D. Hand, Pelham, Ga.

NFA WINTER CONVENTION

Chairman Jim Totman summed up the character of the NFA meeting in Atlanta November 12-14 when he repeated his opening remarks of last June's meeting: "We hope our deliberations will be helpful to our industry, our agriculture and our country." For if ever there was an unselfish convention, devoted only to the good of the nation, this was it.

Mr. Totman summed up the broad picture of an amazingly grown-up industry, with the past ten years each more than doubling the tonnage of the best pre-World War II years, but an industry reaching out for 20 million tons, and capable of producing so much more if it were not for restrictions and shortages.

And most of the rest of the program was devoted to intelligent and clear-cut explanations by Government men as to why those restrictions were considered needful, and what was being done about the shortages.

But let's present the convention in sequence:

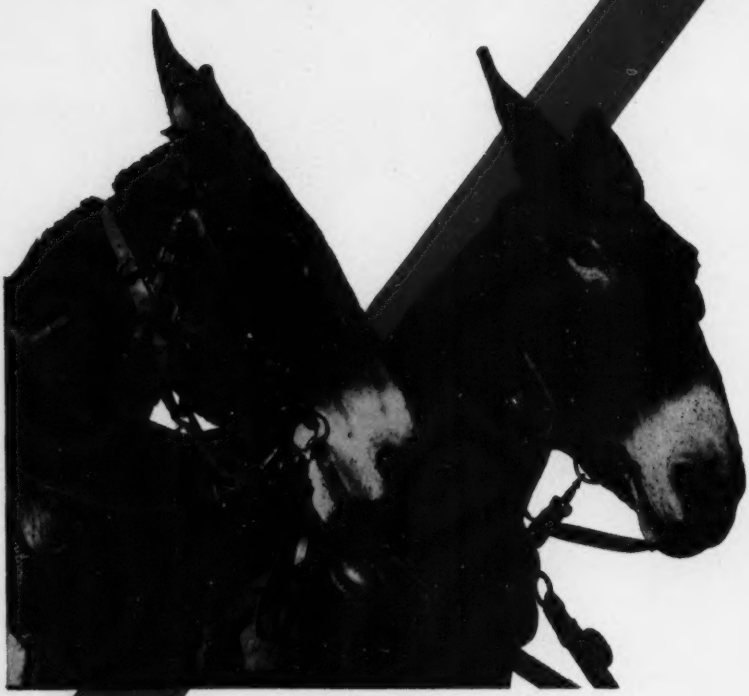
TUESDAY

Following Mr. Totman's address came W. M. Myers, director of field crops research for USDA who spoke on grasslands, and whose figures showed clearly that the pastures of the East alone could produce so much beef as to outrun many times any possible demand, as well as being more than we have seed or fertilizer to handle. But we are nowhere need such a saturation point, and there is still a lot of room for education along the lines that grassland is as essential as row-crops because it produces meat . . . for example $5 in fertilizer produced 116 pounds of beef in one of the many instances he cited, and the production was multiplied by six when fertilized in another case.

First row: George McCarty, Van Wilkerson, and Lee Ashcraft, all of Ashcraft-Wilkerson Company, Atlanta, hosts at the cocktail party; This device created newspaper comment when used at the recent NFA convention: Second row: Dave Long, International Minerals & Chemical Corp., Chicago, Mrs. Watts Gunn, Atlanta, Dr. R. B. Mann, American Potash Institute, Washington, Dr. J. E. Adams, Texas A & M College, Ralph Allen, American Cyanamide Co., Brewster.

KEY TO CF STAFF PIX NFA WINTER MEET

First row: Tracy Cunningham, Armour Fert. Works, Atlanta, John Miller, Price Chemical Co., Louisville, Capt. Travis Whitsel, Union Special Machine Co., Chicago; J. E. Henderson, Jr., H. J. Baker & Bro., Savannah, Lewis Lovett, W. W. Moore, Nashville; T. H. Booner, Chilean Nitrate Sales Corp., Atlanta, Jas. Naftel, Pacific Coast Borax Co., Auburn, Warren Huff, Ashcraft Wilkinson Co., Columbus. Second row: George Suggs, Barrett Division, New York, C. R. Sparks, Buhner Fertilizer Co., Seymour, John Molony, Molony Fertilizer Co., Charleston, L. G. Porter, USDA, Washington, W. T. Doyle, Sturtevant Mill Co., Boston; Gedge Gayle, and G. A. Foss, both of Kelly, Weber & Co., Lake Charles. Third row: R. E. Bennett, Farm Fertilizers, Inc., Omaha, C. R. Martin, The Miami Fertilizer Co., Dayton, Kenneth Keith, Spencer Chemical Co., Kansas City; Jim Totman, Summers Fertilizer Co., Baltimore, and son; H. Dean Smith, Hi-Yield Fertilizer Co., Bonham, Harold Trammell, Farmers Fertilizer Co., Texarkana. Fourth row: John Perryman, R. D. Cole Mfg. Co., Newnan, Tom Rozier, E. W. Harvey, Barrett Division, New York; T. I. Miller, C & S Bank; Fred Techter, Barrett Division, New York; Walter Meeken, Consolidated Rendering Co., Boston, E. W. Harvey, Barrett Division, New York, Graham Patterson. Fifth row: A. L. Wiley, Atlanta, A. B. Everett, Columbia, both of Swift & Co.; Mr. & Mrs. John Mooar, Sturtevant Mill Co., Atlanta, Mr. & Mrs. Floyd Miller; Mr. & Mrs. Jack Rutland, International Minerals & Chemical Corp., Chicago. Sixth row: Frank Greeley, Fulton Bag & Cotton Mills, New Orleans, Baird Green, Jackson Fertilizer Co., Jackson, Dutch Schultz, Reading Bone Fertilizer Co., Reading, Roy Gurkin, Fulton Bag & Cotton Mills, Raleigh; Mr. & Mrs. Cliff Collier, Synthetic Nitrogen Products Corp., Atlanta; Weller Noble, Pacific Guano Co., Berkeley, J. M. Coppinger, International Minerals & Chem. Corp., Chicago, Ray King, Georgia Fertilizer Co., Valdosta. Seventh row: Mrs. Fielding Reed, Atlanta, Dr. D. B. Cloaninger, Clemson College, Clemson; J. S. Zeph, Swift & Co., Wilmington, George Pettit, Potash Co. of America, Washington; Mr. & Mrs. Frank Keenen, E. I. Du Pont de Nemours & Co., Wilmington. Eighth row: W. J. Exum, Commercial Solvents Corp, N. Y., Joe Culpepper, and Claude J. Byrd, both of Spencer Chemical Co., Kansas City, W. E. Evans, Commercial Solvents Corp., Atlanta; Tom Law, Law & Co., Atlanta, Van Wilkinson, Ashcraft-Wilkinson Co., Atlanta; Mr. & Mrs. Bob Mell, Potash Co. of America, Atlanta, Mr. & Mrs. F. H. Kennedy, Potash Co. of America, Peoria, Dr. Fielding Reed, American Potash Institute, Atlanta.



IMPORTANT ANGLE ON FARM PROFITS

Fifty years ago a team like this was just about the finest farm machinery you could lay your hands on. While mules still have their place on many farms, today's successful farmer depends more on motorized tools to lighten his labors, reduce his risks and increase his profits.

Among the many modern techniques for making farming pay, none are so important as the wise use of fertilizers best suited to maintain or enrich the productivity of the soil.

Many of the most effective fertilizers are compounded with potash, often with Sunshine State Potash, a product of New Mexico. Potash nourishes the soil and helps strengthen plants, increasing their resistance to disease and drought.

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HIGRADE MURIATE OF POTASH
62/63% K_2O
GRANULAR MURIATE OF POTASH
48/52% K_2O
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There's an extra wall in CPC Multiwall bags. You don't see it . . . but you realize it's there; shielding your product, your company, and your profits. It's added protection from delays . . . dissatisfied customers . . . shipping losses.

When you ship in CPC Multiwalls, you know you are protected by the additional wall of INTEGRITY, EXPERIENCE, QUALITY and SERVICE.

CHEMICAL PACKAGING CORP., Savannah, Georgia

Hay on fertilized fields could make up the feed grain deficit, and that is very important in a period of serious need for pork and other animals for slaughter. Our population is growing . . . the paper this morning says it is 155 million . . . there is a real need for more meat in the average diet. The job begun by Russell Coleman—and for which the speaker gave him full credit—must be continued.

Safety was next on the list, and the title "Safety is good business" was amply demonstrated by H. R. Krueger of Phillips Chemical, who is a member of the advisory committee of the fertilizer section of the National Safety Congress.

Our industry has the highest-frequency rate in the chemical manufacturing group, and one of the highest injury-severity rates, and the accident rate is still climbing. We think of the steel industry as dangerous employment, yet our insurance rate is 3 times that of open hearth steel, and twice that of cement, which we also thing is hazardous.

Clean, mechanized plants lower accident rates, partly because the caliber of help is higher in mechanized plants. Eliminate dust. Open up your dark and dangerous passageways. Put safety devices on your equipment . . . and you may begin to get refund checks in five figures, as have some fertilizer plants which have modernized for safety.

That was the morning's program, and the afternoon was left open for golf, shopping and so forth.

That evening Ashcraft-Wilkinson, instead of their traditional Monday night barbecue, held an elaborate cocktail party in the Crystal Room before the banquet.

The banquet itself was featured by an excellent floor show, secured by Rucker McCarty and his able hospitality committee.

WEDNESDAY

This was strictly Government Day, and NPA led off, with Kenneth H. Klipstein as speaker. Mr. Klipstein has spent all his business life in the chemical field, and his talk was from the shoulder. It can be summed up in a few sentences: There are so many other-than-fertilizer uses for the basic fertilizer chemicals, and they are such vital uses, that we must be satisfied with out allocations. The sulphur shortage was evident before Korea, is not actually a war-produced situation . . . and the things being done about it have been published here in previous issues.

So we can go on to USDA which was represented by our good friend Lew Porter because W. R. Allstetter was kept in Washington by the sudden illness of his wife. Lew outlined the NPK needed to meet the crops required, and told how USDA is supporting our industry in asking for adequate supplies.

He spoke of the work being done to use nitric as a substitute for sulphuric, and the difficulties standing in the way of immediate progress along those lines.

Cedric G. Gran represented OPS. He is on part time loan from Mathison and was formerly on the staff of APFC. He expressed appreciation of the Industry Advisory Committees and their definite contribution, and of the problem of keeping those committees properly distributed geographically as well as representative of the large and small concerns in each section of the industry.

He told us that it may be possible to permit us to withhold our filing until the tailored regulation comes out which will specifically set prices for each fertilizer grade—but urged that questionnaires be returned promptly because lack of answers is delaying the tailored regulation.

CPR 22 DATE POSTPONED

As we went to press word came of a ruling which makes it unnecessary to file Form 8 by December 19. See page 57 for NFA report on this.

He presented Henry A. Huschke, who is the man in OPS to be addressed concerning prices.

The Atomic Energy Commission sent Sheldon P. Whimpfen to clarify the situation on uranium recovery from phosphate. It seems uranium has no plant food value but is not harmful in any way to plants, and

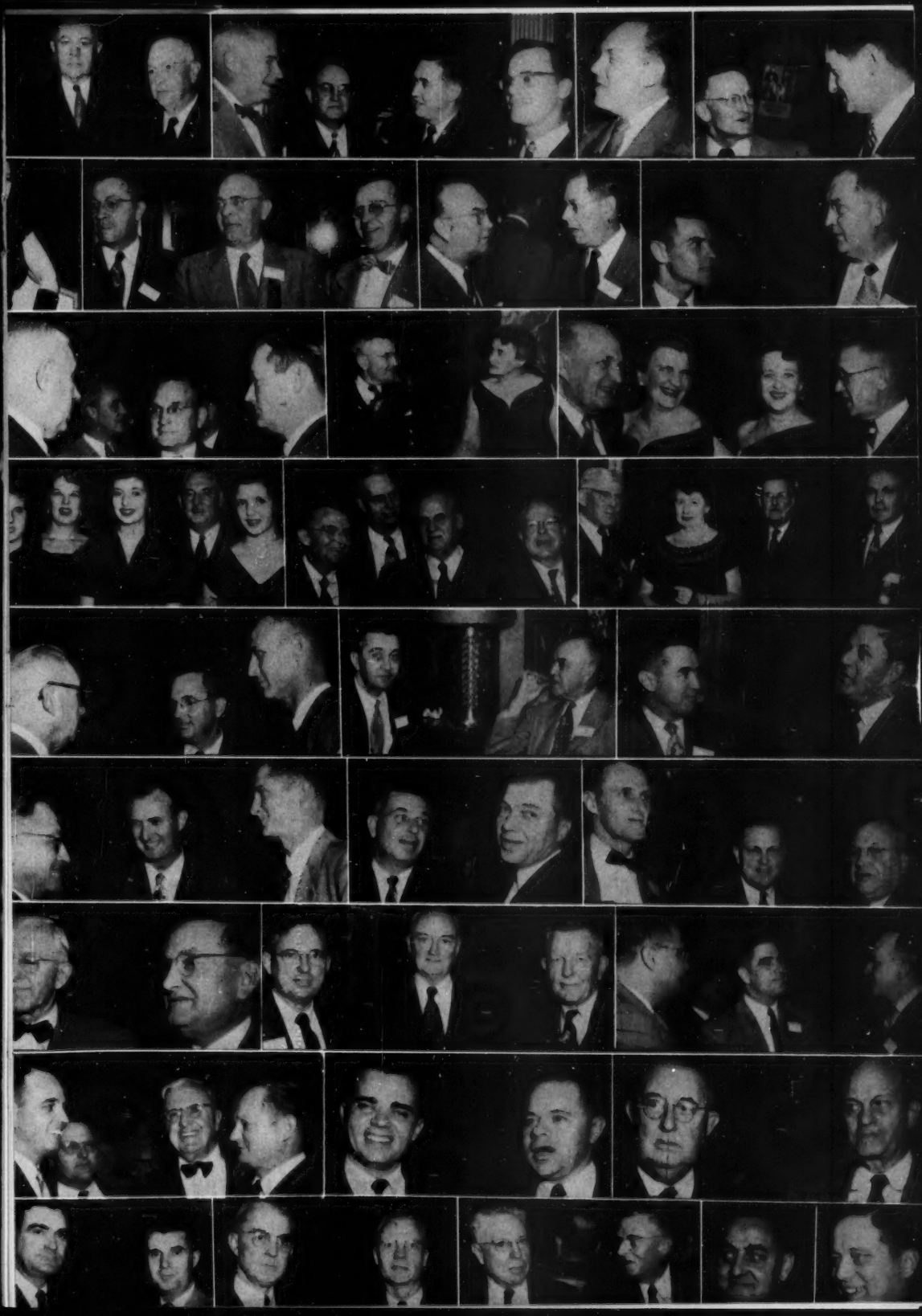
(Continued on page 45)

KEY TO CF STAFF PIX NFA WINTER MEET

First row: Dr. & Mrs. J. K. Plummer, Atlanta, E. S. Strang, New York, all of Tennessee Corp.; Albert Green, Jackson Fertilizer Co., W. H. Milan, Chilean Nitrate Sales Corp., Jackson, C. Dale Hoover, Mississippi State College, Baird Green, Jackson Fert. Co., Jackson; Tom Athey, Albemarle Paper Mfg. Co., Richmond; Nelson White, Smith Agricultural Chemical Co., Columbus, W. A. Webster, Quaker Oats Co., Chicago. Second row: J. Williamson, J. H. Epting, Epting Dist. Co., Leesville, Harvey Melson, Melson Fertilizer Co., Georgetown; Frank Walters, International Minerals & Chemical Corp., Chicago; Tom Davies, Synthetic Nitrogen Products Corp., Columbia; Charlie Chambers, Quaker Oats Co., Cornelia, Roy Nichols, Sumter Fertilizer Mfg. Co., Inc., Sumter. Third row: Harry Moore, Armour & Co., Atlanta, Jack Daughtridge, E. I. Du Pont de Nemours & Co., Wilmington, J. P. Brinton, Hydrocarbon Products, Inc., New York, Henry L. Taylor, Jr., Jacksonville Fertilizer Co., Jacksonville, Texas.

Weller Noble, Pacific Guano Co., Berkeley, Mrs. C. D. Shallenberger, Shreveport; Mr. & Mrs. C. D. Shallenberger, Shreveport Fertilizer Co., Shreveport, Mrs. Jim Totman, Baltimore, J. M. Coppinger, International Minerals & Chemical Corp., Chicago. Fourth row: Joyce Travis, Mrs. Travis Whitsel, Chicago, Audrey Reeves, Travis Whitsel, Union Special Machine Co., Chicago, Cynthia Brown; O. D. Culpepper, Swift & Co., Albany, C. H. Elrod, International Minerals & Chemical Corp., Montgomery, Walter Cooper, Paul Reynolds, Swift & Co., Savannah; B. B. Fall, Rogers & Hubbard Co., Portland, Mr. & Mrs. W. T. Doyle, Sturtevant Mill Co., Boston, Ernie Russell, Old Deerfield Fertilizer Co., South Deerfield. Fifth row: Walter Crady, North American Phosphate Co., Louisville, L. D. Hand, Pelham Phosphate Co., Pelham, Wm. Culpepper, Georgia Fertilizer Co., Valdosta; Howard and Alex M. McIver, Alex M. McIver & Son, Charleston; Dale Hoover, Mississippi State College and Leroy Donald, Lion Oil Co., El Dorado. Sixth row: W. Williamson, Louisiana Agricultural Supply Co., Baton Rouge, John Sanders, Spencer Chemical Co., Atlanta, Bob Mullett, Spencer Chemical Co., Montgomery; Clarence Ball, Phillips Chemical Co., W. W. Johnson, Smith-Rowland Co., both of Norfolk; Wm. Chadwick, New York, and Ray Witham, Woburn, both of International Minerals & Chemical Corp., Walter Meeken, Consolidated Rendering Co., Boston. Seventh row: Tracy Cunningham, Armour Fertilizer Works, Atlanta, Tom Camp, Southwest Potash Corp., New York; L. D. Hand, Pelham Phos. Co., Pelham, George McCarty, Ashcraft-Wilkinson Co., Atlanta, C. E. Littlejohn, U. S. Potash Co., Columbus; Werner Nelson, North Carolina Agric. Experiment Station, Raleigh, Borden Chromister, Barrett Division, Hopewell, Gilbeart Collings Clemson College, Clemson.

Eighth row: J. E. Reynolds, Thurston Chemical Co., Joplin, Herbert Davis, Spencer Chemical Co., Columbia, John C. Mooar, Sturtevant Mill Co., Atlanta; W. L. Inglett, Inglett & Corley, Augusta; B. W. Peake, Birmingham, Jim Weldon, Atlanta, both of St. Regis Scale Corp.; F. N. Bridgers, Wilson and C. H. Suber, Norfolk, both of Farmers Cotton Oil Co. Ninth row: Gene Van Deren, Blue Grass Plant Foods, Inc., Cynthiana, Tom Jones, Arkell & Smiths, Columbus; Morton Hodgson, Empire State Chemical Co., Athens, Nelson Thatch, Mente & Co., Atlanta; Paul Reynolds, Savannah. O. D. Culpepper, Albany, both of Swift & Co.; Malcolm McVickar, NFA, Washington, H. H. Tucker, Coke Oven Ammonia Research Bureau, Columbus.



How do you measure the look in a puppy's eye?

The preliminary precautions have been taken. A well-recommended kennel. A healthy litter. A breed that takes well to youngsters.

Now it's up to the boy to choose.

How will he decide? Perhaps by the look in a puppy's eye.

Chances are, you'll be buying Multiwalls soon again. You've done as every good buyer does. You've considered the reputation of the various suppliers. You've investigated the quality of their product. You've set down your specifications to the last fraction.

Now you pause to think again of the fellow who will make the final choice—your customer. How will he decide? One consideration may well be "the look in a puppy's eye." To say it another way, the sales appeal of your package.

Men who know Multiwalls . . . who buy more than 85 per cent of all Multiwalls made . . . give great weight* to good printing and design.

Union's art directors have concentrated experience. They know how to give your Multiwall package the look it needs to stand out among competition. Volume purchasers of Multiwalls recognize this. They are calling on Union for a greater share of their Multiwall needs.

More so every day . . .

IT'S UNION FOR MULTIWALLS

TRADE MARK UNION

*August, 1951 research study.

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With supply lines around the world, we can furnish manufacturers of fertilizer and agricultural chemicals with essential raw materials. When you have a problem, write, wire or phone us.

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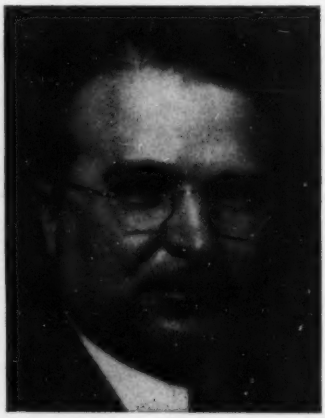
THE NFA CHAIRMAN SPEAKS:

Extracts From Fall Convention Address

By J. E. Totman
Chairman, Board of Directors
The National Fertilizer Association



J. E. Totman

In my opening remarks at our June convention I said—"We are in the midst of turmoil and serious times. We hope our deliberations here will be helpful to our industry, our agriculture and our country." I wish to re-affirm what I said then.

These are still serious times but there is a little clearer picture of what is before us. Our Nation's defense program is now in full operation and other industrial elements of the Nation's economy must of necessity suffer.

Our own fertilizer industry is no exception to this rule. In fact, our industry is particularly unfortunate in that two of its major raw materials—nitrogen and sulfuric acid—are also prime necessities in the manufacture of munitions.

There is no apparent serious shortage ahead for nitrogen—in fact the planting season of 1951-52 should have obtainable at least 5 percent more nitrogen than the previous year. It will not all be just where we manufacturers of fertilizer want it, nor will it be in the forms we prefer. Solid forms of nitrogen will be scarce; the increase will be in the liquid forms.

In order to protect his own operations and to lend his best efforts for the benefit of agriculture, of his industry, and his country, each fertilizer manufacturer should use every pound of nitrogen in the liquid forms that his output and equipment will permit. Of course he must protect the quality and mechanical condition of his goods and should formulate to that end, but our only hope to meet the demand for agricultural nitrogen this season is to make the most of the liquid forms.

Potash

Our position as to potash is also reasonably satisfactory. Present estimates of production indicate that we will have some 5 percent more potash this year than last. These figures include expected imports at last year's rate. Our domestic producers continue to increase output each year. In addition, two new domestic enterprises have entered the Carlsbad field, one of which expects to begin production in the spring of 1952 and the other some time late in 1952 or early in 1953. Imports may also be somewhat increased depending on the European political and economic situation.

Available Phosphoric Acid

I wish I could make as favorable a report on the supply outlook on phosphoric acid as on the other two plant foods. As you all know, sulfur and sulfuric acid have been placed under a limitation order and it is quite apparent that our industry will not likely be able to obtain more than 90 percent of the sulfuric acid that it used last year. Fortunately our industry is not entirely dependent on virgin sulfuric acid made from brimstone, but utilizes large tonnages of acid produced as a by-product from the smelting of copper, zinc, lead and other metallic ores, and large tonnages of so-called spent and sludge acids recovered from operations in other industries. Although the fertilizer industry is the largest user of sulfur—in normal times about 20 percent of the total—it ranks still higher as a user of sulfuric acid—in the neighborhood of 35 percent.

Our attempts to have sulfur exports reduced seem to have met with some success since the export quota for the last quarter has been reduced by 10,000 tons over the previous quarter. For the present at least, this export rate must prevail. Some nations are converting to the use of pyrites, but such conversion can only be achieved over a period of many months.

Every effort is being made to conserve and recover all used and waste sulfuric acid. New installations for the recovery of elemental sulfur from sour gas are now coming into production. Sulfur is also being produced from some of the marginal surface deposits. While all these sources help, such production will fall far below our shortage for some time to come.

Sulfuric acid can be made from gypsum at a price. Pyrites could be burned as a substitute for sulfur in making acid provided we could obtain the pyrites and the furnaces in which to burn them. Either would take a year or more under the present steel emergency.

Acidulation by nitric acid or mixtures of nitric and sulfuric acid, with subsequent ammoniation with anhydrous ammonia is technically sound but requires large amounts of practically unobtainable stainless steel. Large tonnages of very scarce construction steel would be required.

(Continued on page 45)

*Delivered Nov. 13 at the 25th Fall Convention, The National Fertilizer Association, Atlanta, Georgia, November 12-14, 1951.

THE CFA CONVENTION AT FRESNO

The California Fertilizer Association convention, held at the Hotel California, Fresno, November 1-3, with a Board meeting the day before, was a hard-working and hard playing meeting. But the work came first. For two solid days—morning and afternoon — they met and listened. And because there was no entertainment of any kind during the business sessions, and because they wanted to listen, there was good solid attendance at every session. The play was confined to the week-end.

The speakers not only enjoyed a full house, but they had a responsive audience—which is what it takes for speakers to really give their best.

Nothing spectacular emerged from this any more than the NFA meeting which is also reported in this issue. Perhaps the keynote may be seen from this quotation, in which only one word has been changed to make it general: "Although your growers will probably have difficulty obtaining all the (fertilizer) in the form they want, we believe they will get by pretty well in California, provided they take what is available when it is available."

This quotation comes from a panel on the major materials, and was part of the phosphate report by Ralph Waltz, Wilson & George Meyer & Co. Earl Willis, The Barrett Division, on nitrogen; Dave Scott, American Potash and Chemical, on potash; Ned Lewis, Wilbur-Ellis Company, on organics—these made up the panels. And only in the organics department was there any talk of plenty, with new caster meal, blood meal and sewage sludge production, and some imports of bone meal to improve the situation.

This panel was a part of Thursday's session, which was featured by the usual annual reports, and a talk by Dr. Arnold H. Joyal, Fresno State College president.

The speakers included CFA President James M. Quinn and Executive Secretary Sidney H. Bierly.

James M. Quinn

The spot of honor at the luncheon was reserved for Russell Coleman, NFA president and his speech titled "Break the Bank."

The full day of activity was rounded out in the afternoon by a business meeting following President Quinn's annual report, a Board meeting. That evening American Potash & Chemical were hosts at a cocktail party, and later NFA's color movie, "Deeper Acres" was shown.

FRIDAY

Allen B. Lemmon, Chief of the State bureau of chemistry opened the Friday sessions with his "Report of the Year" largely devoted to the problems resulting from a large increase in the sale of fertilizing materials, and of pesticides. Quality control all down the line is Mr. Lemmon's job, and his report indicates a thorough job being done.

"Functions of the division of Plant Industry", by Chas. V. Dick, its chief, followed. California is one of the few states with a sharp line of demarkation between the various agricultural agencies, and the Division of Plant Industry covers control of pests and predatory animals, regulation of pest control operators, and administration of laws preventing fraud and deception in the sale of seeds, fertilizing materials and pesticides.

G. A. Parkes, chief engineer of Los Angeles' new activated sludge plant, a considerable factor in the availability of organics for the region, told of the workings of the Hyperion Plant, which is turning out about 80 tons a day and is ultimately to produce 220 daily tons. To correct handling difficulties in handling what is now a dusty product, pelletizing equipment is to be installed.

J. van Overbeek, Shell Oil Company, talked next on growth regulators and defoliants, giving a brief outline of the function of each in terms of various crops.

SOIL IMPROVEMENT

That afternoon the convention turned to soil improvement, led off by George J. Harrison, US Cotton Field Station, Shafter, Cal. Mr. Harrison spoke on past and present factors contributing to the success of cotton culture in California, which has a unique law prohibiting the growing of any but Acala cotton in a district composed of 7 San Joaquin Valley counties and Riverside County. He outlined the working of the organization known as the California Planting Cotton Seed Distributors, spoke of the mechanization of the cotton acreage, and the sharp increase in ginning capacity, and finally showed how the use of fertilizer is becoming general in the cotton-growing areas.

Dr. W. E. Martin, California Extension Service, spoke on phosphorus deficiency.

Dr. Fielding Reed, American Potash Institute, discussed soil testing and the results accomplished from its use in the Eastern portions of the US, and told how general acceptance of soil testing is moving Westward following the path of fertilizer consumption.

(Continued on page 46)

MAGNESIUM-DEFICIENT GRAPEFRUIT

Magnesium-deficient grapefruit tree sheds leaves in late summer or fall, leaving fruit unprotected. The defoliated twigs become weak and subject to fungus infection and usually die.

Third in a series of six advertisements showing magnesium-deficiency symptoms in tobacco, cotton, grapefruit, corn, potatoes and oats.

You can supply magnesium in the most effective way in mixed fertilizers with Sul-Po-Mag®

Water-Soluble
Double Sulfate of Potash-Magnesia

Reports by many farmers who are getting greatly increased yields and quality of a wide variety of crops by the use of soluble magnesium demonstrate that this nutrient is essential for healthy crop growth.

Fertilizer manufacturers and farmers both know from experience that the most practical and economical way to supply magnesium to growing plants is in *soluble* form in mixed fertilizers or used for direct application. That is why so many manufacturers regularly include *Sul-Po-Mag* in fertilizers for use with crops grown on magnesium-deficient soil.

Sul-Po-Mag, mined and refined exclusively by International, is a properly balanced combination of potash and magnesium, both in soluble form and immediately available to the growing plant.

SUL-PO-MAG (Water-Soluble Double Sulfate of Potash-Magnesia)
MURIATE OF POTASH SULFATE OF POTASH

THIS IS WHY GROWING PLANTS MUST HAVE MAGNESIUM

- It is required in the life process which gives plants their green color and keeps them growing.
- Promotes earlier maturity on soils low in magnesium.
- Enables crops to make better use of other plant foods.
- Carries phosphorus to the growing and fruiting parts of the plant.
- Necessary for the development of seed.
- Promotes the formation of proteins in growing crops.
- Stimulates growth of soil bacteria and fixation of nitrogen by legumes.
- Increases the plant's resistance to diseases.

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INTERNATIONAL MINERALS & CHEMICAL CORPORATION

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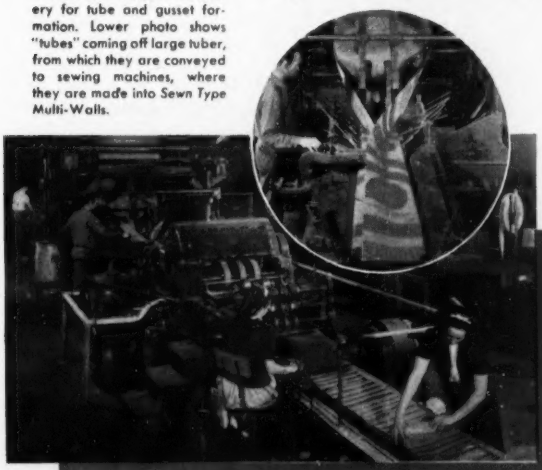
There's more than meets the eye in

HAMMOND *Multi-Wall* BAGS

Insert shows intricate machinery for tube and gusset formation. Lower photo shows "tubes" coming off large tuber, from which they are conveyed to sewing machines, where they are made into *Sewn Type* Multi-Walls.



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SEWN VALVE TYPE

OPEN MOUTH PASTED BOTTOM

OPEN MOUTH SEWN BOTTOM

Satisfied customers in the industries we serve know that all multi-wall bags are not alike. The combined efforts of progressive management, conscientious and thoroughly trained personnel, and expert sales engineers who thoroughly understand the problems of shipping hundreds of products—are the primary reasons for the superiority of Hammond Multi-Wall Bags. Constant research, improvements in papers and bag construction for specific requirements provide Better Bags for shipping cement, flour, fertilizers, chemicals, potatoes, food, feed, plaster, lime, insulating materials, and hundreds of other products. *Write for booklet—"To Serve You Better with Hammond Multi-Wall Bags."*

HAMMOND BAG & PAPER COMPANY

General Offices: **Wellsburg, W. Va.** ***Plants in*** **Wellsburg, W. Va. and Pine Bluff, Ark.**

Representatives in the following cities:

Chicago, Ill. Minneapolis, Minn. New York, N.Y. Bluefield, Va. Philadelphia, Pa. Columbus, Ohio
Charlotte, N.C. Ligonier, Pa. Houston, Texas Kansas City, Mo. Baltimore, Md.

Around the Map

NATIONAL

Sharples and Pennsalt, merging this month, have come together in a very natural progress of events. They made physical contact ten years ago when Sharples moved to Wyandotte, Michigan to be next door to Pennsalt, from which raw materials came.

* * *

Davison Chemical have had such success with granulated mixed fertilizer that they are converting all their mixed fertilizer plants to this product as rapidly as possible, says **W. N. Watmough, Jr.,** v-p in charge of their fertilizer division. They have been operating on granulation at Columbus, Ohio and Perry, Iowa. Perry is completely converted. Curtis Bay (Baltimore) will be 100% converted by the end of the year. Columbus will be entirely on granulated some time in 1952. Nashville conversion may have to wait for construction and equipment materials.

Mr. Watmough points out that uniformity of formula in each granule, even feeding without clogging drilling equipment and resistance to caking in storage have appealed to farmers and to dealers. Field tests have shown excellent results, he reports.

With the trend toward higher analysis, shipping, packaging and handling costs are cut by granulation. Even spreading becomes more important as application rates are as low as 150 pounds per acre in the US and 75 in Canada, and the farm machinery producers are alert to the need and considering equipment especially designed to give maximum evenness of application.

The Davison process produces granules of graduated sizes, which permits control of release rate—the smaller the granule the quicker the release of nutrients.

* * *

Commercial Solvents has created three geographical production divisions, according to **Maynard C. Wheeler,** vice-president. Each will control the company's manufacturing facilities in its area.

The **Central** division, including plants at Terre Haute, Ind., and Peoria, Ill., Newark and Carlstadt, N. J., is under the charge of **Homer Kieweg.** Covering plants at Sterlington, Harvey and Westwego, La., is the **Dixie** division with **J. Eckard Wheeler** in charge. The Agnew, California units are in the **Western** division, managed by **R. B. Crowell.** All three men have had long service with Commercial Solvents — Mr. Crowell since 1920, Mr. Wheeler since 1933 and Mr. Kieweg since 1935.

FLORIDA

Naco's plant at Fort Pierce burned down early last month. It is the "push button" plant on which $400,000 had been spent, and which had been in operation only a few months. Vice-president **O. C. Minton** says the fire started in an area where there was not anything supposed to be combustible, and spread quickly throughout the 270 foot structure, causing complete destruction.

But "just as things cool off enough" to clear away the debris, the plant will be rebuilt. Meanwhile Naco's other plants are supplying the trade.

* * *

International Minerals & Chemical are, as our readers know, setting up a $10,000,000 plant for the recovery of uranium from phosphate. This was announced last spring by president **Louis Ware,** but without details. Construction is actually under way, but the details are still unavailable except that the process used is the result of two years of pilot-plant operation. The plant is not expected to be in operation until the Spring of 1953. **Rust Construction,** Pittsburgh, are constructing the plant.

GEORGIA

Swift & Company's Atlanta plant food division salesmen and plant superintendent saw Georgia Tech win a game in Birmingham, mid-November. On the way they stopped at the famed Purefoy Hotel for a dinner. All this as reward by manager **A. L. Wiley** for a fine job of promoting Swift's pasture plant food this Fall.

LOUISIANA

Commercial Solvents' new nitrogen solution plant at Sterlington is now in operation, and a second unit, being built, is scheduled to be in production by the first of the year.

MISSOURI

Consumers Cooperative, Kansas City, are about to build a $16,000,000 plant to produce ammonium nitrate, nitric acid, anhydrous ammonia and mixed fertilizer. Construction began in October and is expected to be in production in time for the 1954 season.

110,000 tons of nitrate annually, of which three fourths will be granular ammonium nitrate. The project, which will be financed by sale of stock to CCA co-ops and their members, was undertaken after a study made by **Midwest Research Institute,** Kansas City, whose report indicated that total mid-West fertilizer consumption had increased 935% over the 1930-35 average; nitrogen consumption had jumped 822% over 1944, and that one year's output of

the plant could, at present prices, add 75 million dollars to the annual corn crop of the region.

Howard A. Cowden is president of the association. The plant will serve CCA's three mixing plants at St. Joseph, Mo., Eagle Grove, Ia., and Muskogee, Okla.

NEW YORK

Berkshire Chemicals, Inc. is the new name of **Millmaster Chemical Company,** New York City. Offices will remain in the Greybar Building, and the concern will continue to act as exclusive sales agents for **F. W. Berk & Co.** selling agricultural magnesia and other fertilizer and allied farm chemical materials.

Officers are: **M. H. McAllister,** executive v-p; **W. L. Gay,** v-p; **Arthur Smith,** v-p; **Ruth Romer,** secretary-treasurer; **J. T. Malloy,** assistant treasurer; **J. G. Langille,** assistant secretary. Directors are McAllister, Gay, Smith, H. A. Withy and Miss Romer.

OHIO

Virginia-Carolina have just completed rebuilding the plant in Cincinnati which was destroyed by fire in May 1950. It is equipped with the most modern machinery and facilities. Open house was held November 8-9 and farmers and dealers were invited to inspect the new facility.

TEXAS

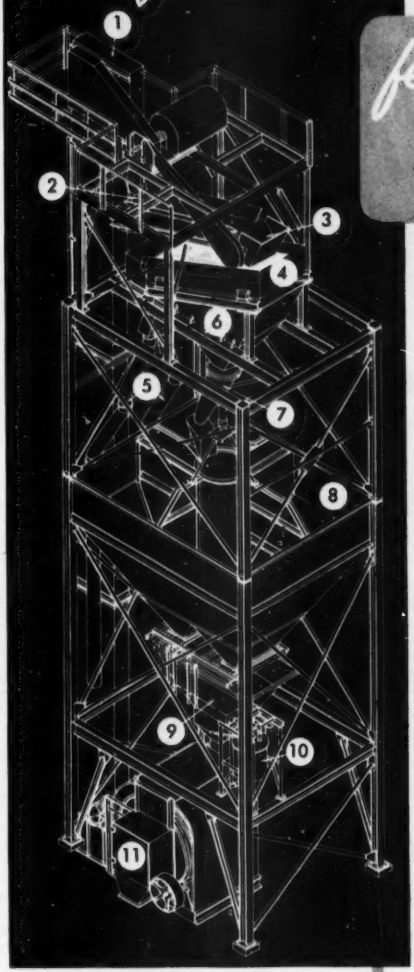
Gulf Oil is building a 20-tons a day sulfur recovery unit at Waddell and one at Port Arthur, which is capable of recovering 60 daily tons from the refinery gas. **Ralph M. Parsons Co** are the builders.

* * *

Hi-Yield Fertilizer, Bonham, must have the kind of public relations program we have so often advocated. Involved in the usual argument over "smell," they were aided by the following in a newspaper where they do not have a plant, Ladonia. And if Dean Smith and his people are not interested in moving to Ladonia, perhaps some one else may wish to take advantage of this invitation:

Sometime ago somewhat of a "smell" arose in the capital of the county, Bonham, over the

Quick facts about JOHNSON *fertilizer* BLENDING PLANTS...



1. Chain bucket elevator handles up to 1000 cu. ft. per hour.
2. High-speed clod breaker reduces material to required size.
3. Self-cleaning belt conveyor feeds the pulverized material from clod breaker to screen.
4. Vibrating 4' x 10' separating screen controls the size of all material fed into hopper.
5. Reject pipes return oversize material from screen to pulverizer to bucket elevator for resizing.
6. Collecting hopper under screen charges pivoted distributor.
7. Full-revolving distributor feeds screened material from hopper into sectional bin.
8. Johnson 65 cu. yd. Step-by-Step Bin, with fast-flowing 60° bottom slopes, has four 15-yd. compartments arranged around 5 cu. yd. central tank.
9. Multiple-material weigh batcher, with 5,000-lb. dial-head scale, accurately weighs 5 or more fine-grained materials.
10. For adding liquids, semi-automatic solution weigh-batcher has a capacity of 500 lbs.
11. Mixing unit (2-ton capacity).

Developed to meet the special blending requirements of a large fertilizer manufacturer, this modern installation is typical of the many sizes and types of Johnson plants available for mixing and blending all types of materials . . . manually-operated or fully-automatic . . . engineered to meet your exact requirements. Your Johnson distributor can show you many time and labor-saving ideas on complete plants, or auxiliary equipment, that will increase your output and profit. See him, or write us today.

J180

Mail to: C. S. JOHNSON CO. CHAMPAIGN, ILL. (Koehring Subsidiary)

☐ Send us more data on Johnson fertilizer blending plants. ☐ Have Johnson distributor call.

NAME ..... TITLE ..... C. F.

COMPANY ..... DIV. .....

STREET .....

CITY ..... STATE .....

Also interested in: ☐ bulk phosphate storage plants ☐ aeration systems ☐ screw conveyors ☐ bucket elevators ☐ bins ☐ hoppers ☐ batchers ☐ clamshell buckets

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★ PLANT MODERNIZATION PROGRAMS
★ CONTINUOUS AMMONIATION UNITS
★ MIXING AND SHIPPING EQUIPMENT

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Bucket Elevators
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Continuous Acidulating Processes
Continuous Ammoniating Systems
Conveyors
Coolers
Crushers
Disintegrators
Dry-Mixing Units
Dust-Arresting Equipment
Fume Scrubbing Systems
Hoppers and Spouts
Materials Handling Equipment
Milling and Screening Units
Multiple Hopper Batching Systems
Oil Fired Dryers
Plant Mechanization Systems
Pneumatically-Operated Gravity Batch Mixers
Pneumatically-Controlled Valves
Pulverizers
Sackett Timken Bearings
Sacking Units
Scales
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Shipping Units
Shuttle Belt Conveying Systems
Tailing Mills
Vacuum Condensing Systems

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SACKETT

THE A. J. SACKETT & SONS CO.
1727 S. HIGHLAND AVENUE
BALTIMORE 24, MARYLAND

"smell" emanating from the plant of the Hi-Yield Fertilizer Company of that city. Certain materials in the manufacture of fertilizer as well as many other items have been in extreme short supply for many months now and manufacturers and converters have had to resort to substitutes, which was what the fertilizer company did this spring, substituting a chemical which emitted a rank odor because the oderless item could not be obtained.

We down Ladonia way thought the whole matter was settled many months ago, and that everybody was happy, smell or otherwise, until in Bonham paper of Monday somebody in a little ad on the back page brings up that "smell" again and says it's about time for it to go—payroll or no payroll.

Frankly, we know that Dean Smith and his associates are not deliberately contaminating the air of the county seat. We are sure that they are doing everything in their power to keep those obnoxious odors at a minimum. The forward-stepping businessmen of Bonham are no doubt 100 per cent behind the fertilizer company too, appreciating it for what it has been doing and is doing for the town, county and the entire North Texas area. The complainers do not realize the full value of this plant to not only Bonham, but all of North Texas where their products are used.

Mr. Smith and his associates no doubt feel they have made a mistake in establishing the plant where the citizenry will allow the foulest smelling sewage disposal plant in Texas to continue, status quo, and then "jump on" him with all fours because of his plant odors.

Mr. Smith if you will come to Ladonia with your plant, we'll locate you suitable trackage on a live-wire railroad—a railroad which offers freight, passenger, express and mail service—something Bonham can't give you. We can't give you a building—We'll give you 100 per cent cooperation though and can locate you where the "smell" isn't contaminated by big city odors and everybody can be happy!

WEST VIRGINIA

Chemical Formulators, Inc. North Charleston, are renovating the fertilizer section of their plant, installing a new bin and batch weighing system which, according to **R. E. Kincaid,** president and general manager, will increase capacity. Completion is dated January 1, 1952.

WASHINGTON

Charles H. Lilly Co. have established a mixing plant at Tacoma with a capacity of 30 tons per hour. They will mix fertilizer, calf meal and a root-weevile bait there.

WISCONSIN

Wisconsin Calfide Corporation, Milwaukee, has incorporated to "acquire, sell and distribute" agricultural products, including fertilizers. Incorporators are **Eugene Jaffe** and **Perry L. Halseth.** The concern may be located at 2000 South Fourth Street, Milwaukee.

AUSTRALIA

It has been authoritatively stated that at the present rate of superphosphate production, Australia will be short by at least 200,000 tons by next year.

BRAZIL

SA Reunidas F. Materazzo will build in Sao Paulo a 60 ton contact sulfuric acid plant to utilize "coal brasses" pyrite. **Chemical Construction Corporation,** New York, which has built two previous plants for the same concern in the same city, was given the order by **Brazil Export Company,** also of New York. The first of these plants, a 25-ton daily capacity was built in 1936. In 1950 a 30-ton plant was ordered.

CANADA

Consolidated Paper Corp. is building at Grand-Mere, Quebec, a $500,000 plant capable of producing 5,000 annual tons of elemental sulphur from local pyrite ores, and expects to have it in production by next summer.

• • •

Consolidated Mining and Smelting have begun construction on their projected nine million dollar fertilizer plant near Kimberley which when completed in early 1953 is expected to produce 70,000 annual tons of high-analysis ammonia fertilizer. The plant is being constructed by **Stone & Webster Canada, Ltd.,**

SACKETT FERTILIZER PROCESSING SYSTEMS PAY OFF

Control Panel

These fast fertilizer processing systems have reduced production costs in some plants as much as 65% . . . An estimated cost savings included with a Sackett survey of your production operations may even exceed this figure.

SACKETT ONE MAN BATCH-WEIGH SYSTEM

1. Eliminates waste of manpower.

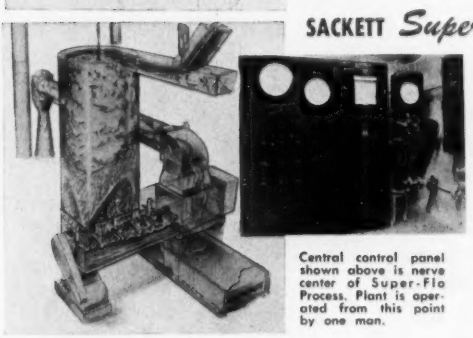
2. Fast-acting weigh valves and printed weigh record provides more rapid and accurate weighing.

3. Circular design of storage hopper accelerates flow of ingredients through weigh valves . . . no corners or valley angles to retard flow of material.

4. Its compact design permits installation in existing buildings with minimum alterations.

5. The installation of this system does not, in any way, disturb existing mixing facilities.

Built in four sizes, 25 tons to 100 tons per hour.



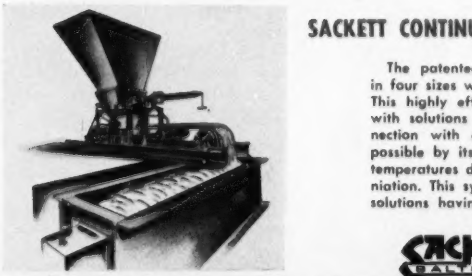
Central control panel shown above is nerve center of Super-Flo Process. Plant is operated from this point by one man.

SACKETT *Super-Flo*... A CONTINUOUS SUPERPHOSPHATE MANUFACTURING PROCESS

This new Sackett-conceived and developed process produces a superphosphate of premium quality in either powdered or granular form. Its complete mechanization and centralized panel control brings to the industry entirely new conceptions of high production speeds, low manufacturing costs and quality product control.

These Sackett patented processes are built in three sizes, 25 tons to 75 tons per hour.

Exclusive suspended acidulation produces highly converted superphosphate of excellent quality.



SACKETT CONTINUOUS AMMONIATING SYSTEM

The patented Sackett Continuous Ammoniation System is now being offered in four sizes with capacities ranging from 25 tons per hour to 100 tons per hour. This highly efficient method of ammoniating superphosphates and mixed goods with solutions offers many important advantages and is easily installed in connection with existing basing equipment. Higher ammoniation rates are made possible by its accurate proportioning of solids and solutions and lower reactive temperatures due to its exclusive aerating action which takes place during ammoniation. This system is also built in pressurized design for anhydrous ammonia or solutions having high vapor pressures.

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BALTIMORE

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and will use by-products from the nearby Sullivan concentrator.

ENGLAND

A new sulphuric plant is being considered at Whitehaven to make use of the gypsum deposits recently discovered near that city. The plant will cost better than six million dollars.

INDIA

Marorphal, a wild fruit growing prolifically in most forests of the United Provinces, has proven successful as a substitute for Jute, according to the Lucknow government. In view of the economic-political difficulties surrounding jute bag production, this can be an important step forward.

* * *

India is using three American **Piper Supercub** planes to battle locusts. Aldrin is sprayed from long wing booms, and each plane can cover 80 acres per flight. The planes were supplied through the Point Four Program.

PACIFIC NORTHWEST MEETING HELD AT McCALL, IDAHO

The Pacific Northwest Plant Food Association celebrated its second birthday with its annual meeting, October 25, at McCall, Idaho. Active members (manufacturer members) in this association now number eighteen. These and the associate members, now approximately the same number, constitute the associations representation from the three western states of Washington, Idaho, and Oregon.

This organization, which represents the interests of the fertilizer industry in the Pacific Northwest, elected as its new president, Henning Waltersdorph, Seattle; and vice-president, Mac Taylor, Seattle. Retiring president was G. A. Fitzpatrick from Portland.

The Association's Soil Improvement Committee drew plans for the Third Regional Fertilizer Conference at Pocatello, Idaho, July 9, 10, and 11.

One of the important functions of this committee is an educational program carrying the latest information from the experiment station and related research by way of fertilizer salesmen and field men to the fertilizer dealer and ultimately to the farmer.

This year's program, under the chairmanship of Jack Wursten, Pocatello, Idaho, will carry three forenoon programs on technical subjects of soil fertility and three field trips to phosphorus deposits; Aberdeen Experiment Station; and a tour of the phosphorus fertilizer plant.

TENTATIVE PROGRAM SOIL AND FERTILIZER INVESTIGATIONS WITH RADIOACTIVE ELEMENTS

Auditorium, Plant Industry Station Beltsville, Md.

10:00 A.M.-4:00 P.M. December 19, 1951

A Resume of the Radiophosphorus Research Program.—F. W. Parker.

Regional Reports*:

Western: The Influence of Kind of Fertilizer Material and Placement on Utilization of Fertilizer Phosphorus by Crops on Calcareous Soils.

North Central: The Influence of Kind of Fertilizer Material and Placement on Utilization of Fertilizer Phosphorus by Crops on Acid Soils.

Southern: Studies of Root Distribution of Different Crops Through the Use of Radiophosphorus and its Relation to Fertilizer Placement.

Northeastern: The Effectiveness of Foliar Sprays Applied to Apple Trees.

The Use of Radiophosphorus to Determine the Phosphorus Fertility Status of Soils.—L. A. Dean

The Influence of the Calcium in Mixed Fertilizers on the Calcium Nutrition of Tobacco.—J. M. Blume

The Use of Radioisotopes in Studying Minor Element Deficiencies and Chlorosis.—S. B. Hendricks

Lunch will be in the Plant Industry Station cafeteria.

*The titles of the regional reports are tentative and the speakers have not been selected.

Plant Industry Bureau 50 Years Old

Fifty years of plant science was recently celebrated at Plant Industry Station, Beltsville, Md. Occasion was the golden jubilee of the establishment of the Bureau of Plant Industry in the U. S. Department of Agriculture.

Research by scientists in the present Bureau—which now includes investigations in soils and agricultural engineering—is conducted cooperatively with agricultural experiment stations in 45 States, and has resulted in many outstanding improvements to American crops.

Georgia Society Meeting January 10

The Georgia Plant Food Educational Society, recently organized, will hold a meeting January 10 at the University of Georgia, Athens. The subject will be the use of radioactive tracers, and actual demonstrations are planned. The charter will be presented at this meeting, and those paying dues prior to this date will be listed as charter members. Dues are $5 per member, and may be paid to the Treasurer, Cooper Morcock, 303 Mortgage Guarantee Bldg., Atlanta.

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If your product fits into a bag — we'll make the bag to fit your product.

In the Field of

ALLIED FARM CHEMICALS

GROWTH REGULATORS & DEFOLIANTS

By J. VAN OVERBEEK*

As the name states, growth regulators regulate the growth of plants; they do so by modifying the **pattern** of growth through speeding up or retarding certain of the growth processes. For example: early in spring tomatoes may not set if the night temperatures are too low to permit the process of pollination to take its natural course. Spraying the flower clusters with **4-chlorophenoxyacetic acid** will overcome this natural handicap and fruits form in spite of cool weather.

Pineapples, like tomatoes, are often slow and irregular in producing fruit. By using **naphthaleneacetic acid** the plant can be made to produce flowers and fruit uniformly at any season of the year. The speaker, when he lived in Puerto Rico, could regularly harvest naphthaleneacetic acid-induced pineapples completely out of season, which is a feat just as striking as if it were possible to harvest cherries at Christmas time in California.

These are two examples of how growth regulating chemicals speed up natural processes. They can also retard them. Apples have the habit of falling from the tree before the farmer has a chance to pick them. This used to be a serious source of crop loss, known as pre-harvest drop. Growth regulating chemicals have changed this. An active ingredient in this instance is 2,4,5-**trichlorophenoxypropionic** acid, **TP** for short.

Potatoes when stored have the undesirable habit of sprouting when the end of their dormant period approaches. This can be prevented today by exposing the tubers to the vapors of the **methyl ester of napthaleneacetic acid.** These are two examples of how growth regulators can retard processes.

The most striking chemical of all, and economically the most important is **2, 4-dichlorophenoxyacetic acid,** widely known as **2, 4-D.** Many people recognize this compound exclusively as a weedkiller; it is a growth regulator also. At a concentration of a few parts per million it will do an amazing array of things: it will keep pears, apples, and citrus fruit on the tree; it will prevent leaf drop after use of insecticical sprays; it will improve the keeping quality of lemons; it will improve keeping quality of potatoes when the foliage is sprayed with it before harvest time; it will improve the color of certain red potatoes; it will ripen bananas; it will put roots on stems in the most unusual places; it will cause pineapple plants to flower and do many, many other things. Yet the same compound at higher dosages will kill plants. How is this all possible?

All the chemicals named above belong to a group correctly known as **auxins;** they are all imitations of the naturally occurring growth **hormone, indoleacetic acid.** The concentration, or level, of this hormone in the plant regulates the growth processes of the plant. Its concentration in turn is regulated by the plant itself and its environment through control of the production and destruction of the hormone. The synthetic auxins, from 4-chlorophenoxyacetic acid to 2, 4-D, are as active in the plant as they are because the plant cannot destroy them as fast as it can its own natural product, indoleacetic acid. This is why a single small dosage of these synthetic growth regulators has such a long-lasting and far-reaching effect. The effect of synthetic auxins in small quantities rests simply on the raising of the auxin level in the plant by the addition of the artificial auxin to the naturally-occurring one. The artificial setting of tomatoes, the artificial induction of flowers in the pineapple, the control of pre-harvest drop, and prevention of sprouting of potatoes are all explained by this supplementation of the naturally-occurring auxin by the artificial one.

In explaining the action of weedkillers such as 2, 4-D, it must be realized first that all auxins are capable of killing plants provided they are given in high enough concentrations. Such large dosages, far beyond those which occur in nature, upset the balance between biochemical reactions in the plant. This in turn results in the production and accumulation of normal metabolites in abnormal quantities. Products which in their normal concentrations are beneficial now become toxic. 2, 4-D is so successful as a weedkiller because molecule for molecule it is more active than most other auxins and vastly more active than the naturally-occurring auxin, indoleacetic acid. According to this view, 2, 4-D does not kill a plant directly, like pentachlorophenol does, but it is the plant's own products, produced in abnormal quantities under influence of this growth regulator, which ultimately are the lethal agents. This also explains the slow action of 2, 4-D weedkillers.

DEFOLIANTS

Defoliation proper takes place at the base of the leaf petiole. Here is located a special tissue which disintegrates when defoliation takes place.

Deciduous trees drop their leaves upon relatively weak simuli such as a lengthening of the night ac-

*Abstract of talk presented to California Fertilizer Association, Fresno, Calif. November 2, 1951—28th Annual Convention—By J. van Overbeek, Shell Oil Company, Agricultural Laboratory, Modesto, California.

Producing Nitrogen At Full Capacity!

Phillips is producing nitrogen fertilizer materials at full capacity. But even our tremendous rate of production isn't always sufficient to meet today's demand. We'll do our best for you. Keep us in mind if you need nitrogen in any form.

AMMONIUM SULFATE—Phillips *66* Ammonium Sulfate is a free-flowing 21% nitrogen material! Mixes easily! Uniform crystals resist caking! Ideal for high-analysis mixed goods! A fine direct application material!

AMMONIUM NITRATE—Phillips *66* Prilled Ammonium Nitrate contains 33% nitrogen. The small, coated prills or pellets resist caking . . . handle easily. Phillips *66* Prilled Ammonium Nitrate can be depended on for uniform, free-flowing properties and top-notch crop response.

NITROGEN SOLUTIONS—More N per dollar! Phillips *66* Nitrogen Solutions are well suited to the preparation of high-analysis fertilizers and the ammoniation of superphosphate. These three nitrogen solutions keep handling costs low . . . promote rapid, thorough curing!

ANHYDROUS AMMONIA—Tank car shipments of Anhydrous Ammonia (82% nitrogen) go out to Phillips contract customers from Phillips production facilities in the Texas Panhandle. Write our nearest district office for full information.

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companied by a moderate drop in temperature. Cotton does not belong to this group of plants and requires a much stronger stimulus before it will drop its leaves. A night frost at the proper time is required. It is understandable, therefore, that a highly active chemical is required to produce the effects of such a frost artificially. This is exactly what the commercially successful cotton defoliants do.

In certain crops it is only necessary to dry up the leaves, and complete defoliation is not necessary. Potatoes, seed alfalfa, and beans are a few examples. In such cases also, compounds are used which induce the physiological effects of an early frost.

NACO Promotes Brown

Rue Lane Brown has been named head of the newly-formed insecticide division at the Fort Pierce branch of Naco Fertilizer Company, according to an announcement by Kenneth D. Morrison, President. Mr. Brown, who has been a member of the Naco staff since 1941, has been assistant manager of the Fort Pierce operation.

The insecticide plant now under construction at Fort Pierce will be placed in operation during the current citrus and vegetable seasons, according to Mr. Morrison.

Howe Scale Issues Hand Trucks Catalog

A twelve-page Condensed Truck Catalog has been just released by the Howe Scale Company, Rutland, Vermont. Specifications and illustrations are shown for the complete line of the latest Howe two and four-wheel Hand Trucks, Trailer Trucks, Baggage Wagons, Platform Skids, Dollies, Lift Jack Systems, Wheels, Casters and Molded-On Rubber Tired Wheels.

For further information, write for a copy of Form 508-B "Move Materials Faster, Easier With Howe Trucks", The Howe Scale Company, Rutland, Vermont.

Chain Belt Issues Roller Chain Bulletin

Baldwin-Rex Double Pitch Roller Chains are pictured and described in detail in a new bulletin released by Chain Belt Company of Milwaukee.

The bulletin describes how these chains can often effect both cost and weight reductions in drives and conveyors. Charts, photos, diagrams, and tables show in detail all Baldwin-Rex Double Pitch Roller Chains —both drive and conveyor types— and the standard attachments available. There is also a description of double pitch chain sprockets.

For a copy, write Chain Belt Company, 1600 West Bruce Street, Dept. PR, Milwaukee 4, Wisconsin and ask for Bulletin 51-2.

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What I require when buying bags:
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3. Technically trained bag salesman...
4. Dependable source with long experience!
5. Bags designed to my product to increase sales!

Choose Chase for all 5 features

Having the right bag for your product is an important decision that should not be left to chance. Chase Bags are designed to provide protection, they are good-looking, they will help increase sales! Your Chase Salesman is an expert in analyzing packaging requirements. He will be glad to specify the container which best meets your needs.

Bags for all industry and agriculture

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- paper and Multiwall bags
- Saxelin open mesh bags
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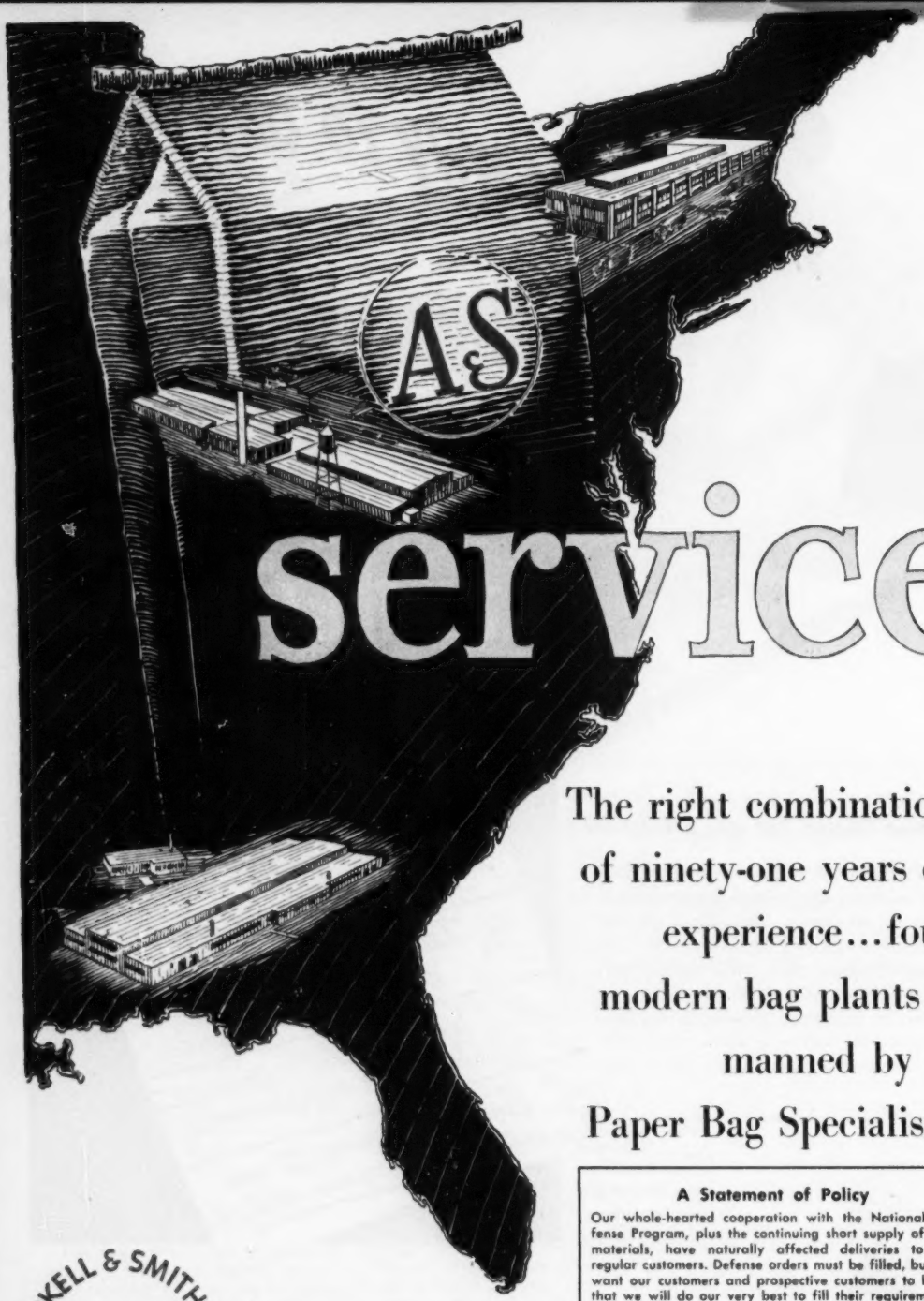
OKLAHOMA CITY • PORTLAND, ORE. • REIDSVILLE, N. C. • HARLINGEN, TEXAS • CHAGRIN FALLS, O. • WORCESTER, MASS. • CROSSETT, ARK. • SAN FRANCISCO



service

The right combination of ninety-one years of experience... four modern bag plants... manned by Paper Bag Specialists.

A Statement of Policy

Our whole-hearted cooperation with the National Defense Program, plus the continuing short supply of raw materials, have naturally affected deliveries to our regular customers. Defense orders must be filled, but we want our customers and prospective customers to know that we will do our very best to fill their requirements.

ARKELL & SMITHS · THE OLDEST NAME IN PAPER BAGS ·

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TENNESSEE'S FIRST farmer owned co-operative plant-food plant is seen above. Located just south of Nashville, this plant began production of Co-op brand mixed fertilizer late in January, 1951.

Distributed throughout all the counties of Tennessee, Co-Op Brand fertilizer is applied principally to corn, cotton, tobacco and pasture. Like so many leading fertilizer mixers, Co-Op uses Spensol.

Co-op of Tennessee

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HUGE QUANTITIES OF SPENSOL (Spencer Nitrogen Solutions) are produced each day in plants like this one at Pittsburg, Kansas. Because of its growing reputation for producing well-conditioned fertilizers at low cost, Spensol is in demand.

THERE'S NO CHARGE for scientific advice from Spencer's Technical Services Department. If you have a production problem, call upon this staff of experts. Even if you're not a Spensol customer, take advantage of this free Spencer service.

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MARKETS

Tag Sales Continue To Increase

October, 1951, tax tag sales and reports of shipments jumped 36 percent—from 443,892 equivalent tons to 602,356 tons — over the same month in 1950, according to The National Fertilizer Association. This increase in sales will do much to offset the 19,000 ton deficit registered for the first quarter of the fertilizer year beginning July 1, 1951, compared to the July 1-September 30, 1950 period.

Tag sales during the first 9 months of this year—9.1 million enquivalent tons—are 480,000 tons greater than the 8.6 million tons sold in the first 3 quarters of the preceding year.

Superphosphate Production Off

Superphosphate production, 18 percent A.P.A. basis, in September, 1951, was 811,000 tons—34,000 tons less than August, 1951 production, and 55,000 tons less than the 866,000 tons produced during the same month a year ago, according to The National Fertilizer Association.

Recent low production figures tend to indicate that the greater growing sulphur pinch is being felt.

ORGANICS: The market on organic fertilizers is relatively quiet with producers of domestic Nitrogenous Tankage in a heavily sold position; however, limited supplies of domestic Nitrogenous are available for the Spring months at prices ranging from $4.25 to $4.90 per unit of Ammonia f.o.b. production point. There are practically no offerings of imported Nitrogenous but some supplies of imported Castor Pomace are in the market.

CASTOR POMACE: Current production of domestic material is practically at a stand-still and only limited supplies will be available for the next few months. The domestic production is currently priced at $37.25 per ton in burlap bags, f.o.b. Northeastern production points for material guaranteed minimum 6.75% Ammonia. Imported Castor Pomace is available at around $45.00 per ton in bags, CIF Atlantic ports.

FERTILIZER TAX TAG SALES AND REPORTED SHIPMENTS[1]

(In Equivalent Short Tons)

Compiled by The National Fertilizer Association

STATE	October 1951	October 1950	January-September 1951	January-September 1950	July-September 1951-52	July-September 1950-51
Virginia	1/	1/	673,477	594,141	91,484	82,359
N. Carolina	1/	1/	1,541,157	1,529,970	93,942	105,176
S. Carolina	66,622	45,440	749,921	790,175	70,610	84,560
Georgia	66,138	60,583	1,070,957	1,024,243	52,646	67,938
Florida	134,163	97,626	807,358	730,596	152,411	160,448
Alabama	45,489	43,549	945,383	892,650	82,058	68,355
Tennessee	90,020	12,131	464,571	426,296	73,428	53,558
Arkansas	15,138	11,672	373,256	319,568	22,120	29,438
Louisiana	18,526	18,867	264,195	228,802	29,392	24,321
Texas	64,871	79,540	424,687	426,764	78,650	95,234
Oklahoma	1/	1/	126,391	121,951	37,823	33,639
TOTAL SOUTH	500,967	369,408	7,441,353	7,085,156	784,564	805,026
Indiana	38,675	34,540	648,130	680,798	196,560	215,309
Kentucky	31,531	22,961	427,843	476,794	77,508	77,387
Missouri	31,183	16,983	614,468	407,206	167,467	147,198
TOTAL MIDWEST	101,389	74,484	1,690,441	1,564,798	441,535	439,894
GRAND TOTAL	602,356	443,892	9,131,794	8,649,954	1,226,099	1,244,920

1/ Oklahoma and North Carolina report tax tag sales 30 days after the end of the current month. Oklahoma and North Carolina tag sales for September, 1951 represent 22,827 and 56,152 tons respectively, compared to 20,924 and 70,432 tons during September, 1950. Virginia reports quarterly.

U. S. SUPERPHOSPHATE SUMMARIES

In Thousands of Short Tons. Based on Data for 205 Plants, Representing Total U. S. Production Compiled from Reports Submitted to The National Fertilizer Association and a Summary of Reports Submitted to the Bureau of the Census.

	September, 1951			Total, 18% APA Basis				Conc. (45% APA)	
	Normal 18% APA Basis	Wet Base 18% APA Basis	Conc. 45% APA Basis	Sept. 1951	Sept. 1950	Jan.-Sept. 1951	Jan.-Sept. 1950	Jan.-Sept. 1951	Jan.-Sept. 1950
Stocks, first of period	1,089	11	64	1,261	1,245	1,207	1,421	55	104
Production	664	6	56	811	866	8,490	8,047	544	520
Received from other plants	9	—	—	9	10	100	69	—	—
Book adjustments	—	—	—	—	—	7	62	—	—4
Total Supply	1,762	17	120	2,081	2,121	9,804	9,599	599	620
Shipments	367	6	53	506	548	4,986	4,989	525	545
Used in reporting plants	329	1	2	335	359	3,578	3,396	8	12
Total disposition	696	7	55	841	907	8,564	8,385	533	557
Stocks, end of period	1,066	10	65	1,240	1,214	1,240	1,214	66	63

DRIED GROUND BLOOD: The Chicago market for unground dried Blood in bulk is around $8.00 to $8.25 per unit of Ammonia f.o.b. Chicago. The New York market is dull and steady at around $8.50.

POTASH: Demand for Potash continues active and the movement steady to fertilizer manufacturers. Imported supplies continue to arrive in good quantity.

GROUND COTTON BUR ASH: This source of Potash primarily in the form of Carbonate of Potash, is available for prompt and spread shipment. The best material tests consistently around 40% K_2O and delivers in most areas at approximately the same price as Sulphate of Potash for which it is a good substitute.

PHOSPHATE ROCK: Movement is practically entirely against contract commitments with domestic buyers. The market remains firm and unchanged.

SUPERPHOSPHATE: The supply situation seems to be getting tighter as time goes on. Demand continues heavy and in many cases dry mixers have been unable to secure sufficient supplies to take care of their expected needs.

SULPHATE OF AMMONIA: This market continues tight as the demand prevents and accumulation at production points. No change in prices has been noted.

AMMONIA NITRATE: Demand continues considerably in excess of supply maintaining the market in an extremely tight position. No change in prices has been noted.

NITRATE OF SODA: The market

recently advanced with a change in price of imported material of $3.50 per ton. Domestic production also advanced 2.50. Demand continues at seasonal levels.

GENERAL: Small fertilizer mixers are particularly worried about their ability to secure sufficient Superphosphate which will govern the quantity of mixed goods produced. Potash and Nitrogen also are somewhat short demand but adequate supplies are in sight for farmers generally.

USE Summary

(Continued from page 19)

One immediate value of the survey, says Dr. R. Q. Parks, chairman of the National Committee's Fertilizer Work Group, is to indicate the best use of phosphate fertilizers now in limited supply because of the sulphur shortage. The scientists say moderate reductions can be made—with only minor cuts in yields—in some crops on some soils that have received heavy applications in the past.

From a long-range view, the survey shows quite clearly that fertilizer can be used to increase food production on a tremendous scale. It underscores the fact that increased fertilization is equivalent to millions of additional acres.

The final report—like the regional ones which preceded it—is being distributed to State Colleges and experiment stations, State Fertilizer Control Officials, State Mobilization Committees, the fertilizer industry, and to the U. S. Department of Agriculture and other interested Federal agencies.

NFA

(Continued from page 24)

that it occurs in Florida and Western rock, but not in the Tennessee variety. The need is, of course, vital to our whole Atomic Energy program, and a great deal is being invested by big operators in the field to recover uranium. It will in the future constitute another commodity, and should become a normal by-product of the phosphate industry. AEC is putting its immediate faith in the wet process plants, because they are the easiest to convert.

A question and answer period followed in which each speaker was presented with questions, mostly sent up in writing from the floor. Here are the responses:

Mr. Klipstein said: steel will ease in the third quarter of 1952, with expansion of productive capacity. In view of the sulphur shortage new superphosphate plants will not be authorized except under special circumstances until the present capacity is being fully employed,—"but put in your application anyhow and if we cannot OK it we will at least tell you why not."

Lew Porter said: USDA is not sponsoring new mixing facilities because existing facilities are not being fully used, awaiting raw material and critical material. However USDA will continue to help get material for repair and maintenance, so long as work contributes to turning out more fertilizer. USDA is back of an aggressive movement to ensure more solid N during the next 24 months.

Henry Huschke, answering the OPS questions, said: There is no provision to add new high freight rates to costs in figuring price bases, but this should be taken care of in the railroad regulation, when the questionnais come in. The ariple superphosphate tonnage will be increased by the AEC program, 100,000 tons of capacity was already under construction, and another 100,000 is part of the new AEC program. Phosphate acid plants will be encouraged when research indicates it is practical to produce higher analysis. It is unlikely that any other industry will move into the uranium recovery program, unless the need becomes so urgent that cost can be ignored. Other acids release uranium from phosphate rock, but at too high a cost.

With which the meeting adjourned until June 16-18 at The Greenbrier.

Totman

(Continued from page 28)

There is no surplus capacity for the production of nitric acid, in fact it is now on the scarcity list. New plants would have to be constructed at a cost of about $150.00 a ton of annual capacity. This would mean an investment of well over $750,000,000 for the nitric acid plants alone. The anhydrous ammonia necessary to make this nitric acid is practically equivalent to our total production today and an additional like amount of 1,490,000 tons of anhydrous would be needed to complete the ammoniation of the product. Besides, it would be hard indeed to obtain the necessary plat-

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Superphosphate — Sulphuric Acid — Complete Fertilizers
Ammoniated Superphosphate

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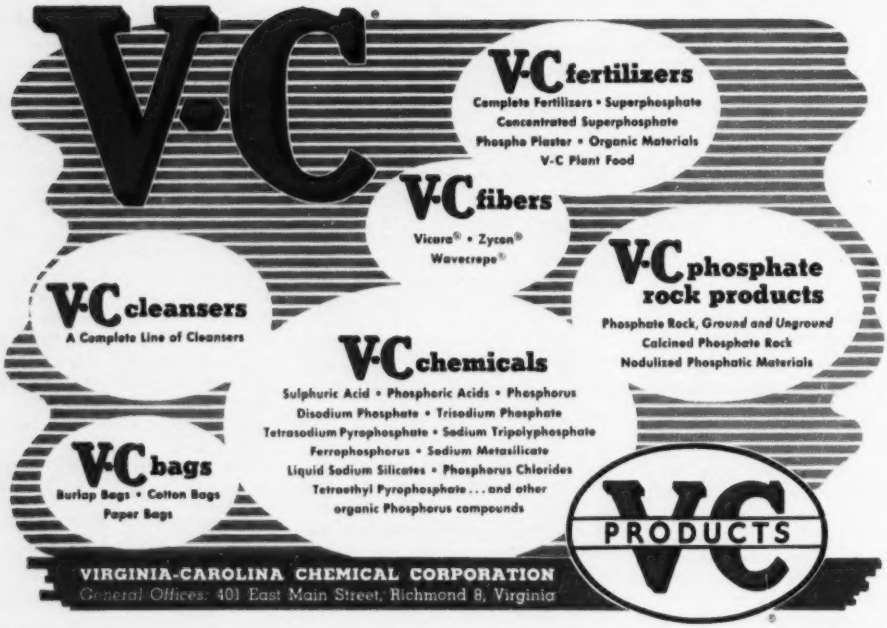
Plants: Savannah, Ga., Atlanta, Ga.,
Charleston, S. C., Roebuck, S. C.



inum catalysts. Even though these processes have been worked out, it will be 5 years or more before any considerable tonnage can be produced.

For the present at least we must look elsewhere for the solution of our shortage of available phosphoric acid.

Tonnage Outlook

The demand for fertilizer continues to mount. The requirement for more and more food for domestic use and for export to our forces overseas, and to our allies, can only be met through greater use of plant food. Our productive acres are already all at work and the necessity is to make each of them work harder by employing all the best methods of crop production including better tillage, better seed, better drainage in some areas and additional irrigation in others, and above all, use of optimum amounts of plant food.

Fertilizer consumption in the calendar year 1950 reached an all-time high of 18,300,000 tons. Estimates indicate that consumption for the fiscal year ended June 30, 1951, probably reached 19,000,000 tons. Presently it appears that for the 1951-52 fiscal year there should be materials available to manufacture about 19,500,000 tons of fertilizer. Certainly this will not meet the demand and by no means the tonnage that could be profitably used or that is necessary to produce our needed crops, and in addition to adequately maintain the fertility of our soils. Under our present national economy set-up, it would seem that the demand for plant food would continue to grow each year.

At present our industry still has excess manufacturing capacity considerably beyond the supply of raw materials, and it is incumbent on us, in my opinion, to continue to make every effort to supply the consumption demand for fertilizers as equitably as these supplies will permit. It is a period of national emergency possibly even approaching a national crisis. Our industry will no doubt be called upon to make further sacrifices similar to our reduction in obtainable sulfuric acid. We must do our part but at the same time we must lend every effort as an industry to see that agricultural production is not handicapped through our industry not receiving its proper proportion of construction and upkeep materials and its **full share** of scarce raw materials.

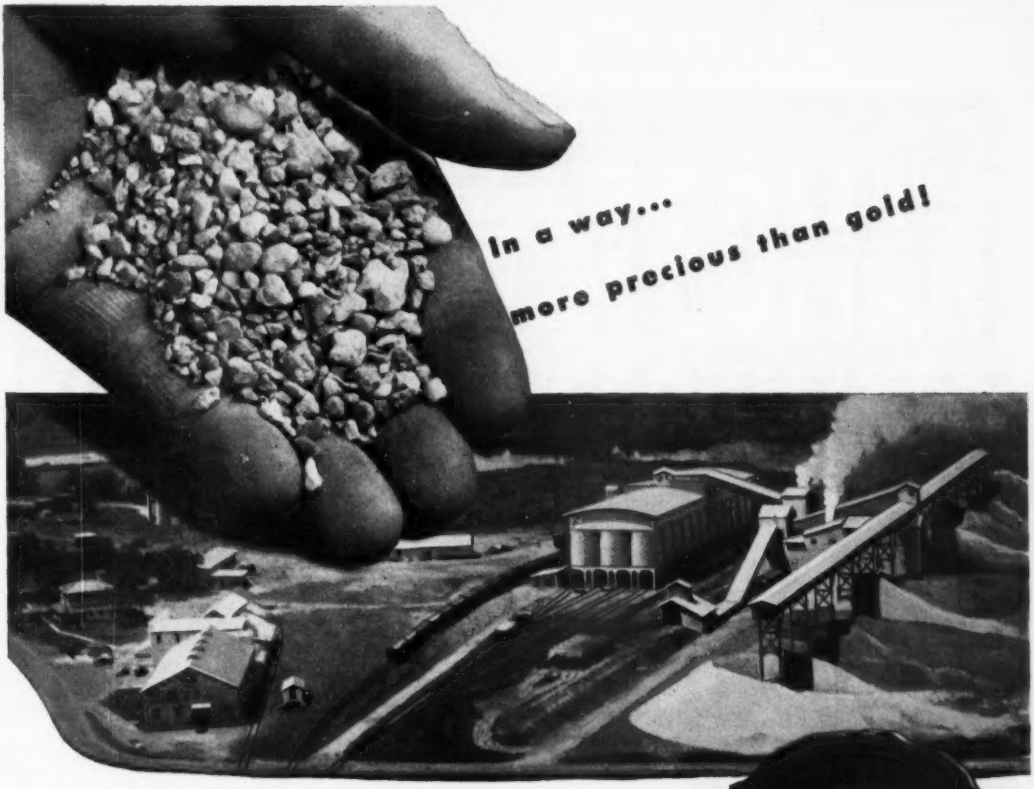
We again pledge our every effort to the end that our domestic agriculture shall receive every pound of plant food that can be produced in order that it may fulfill its production goals.

CFA

(Continued from page 29)

Dr. Oscar Lorenz, California AES, spoke on the movement of nitrogen in irrigation beds.

Dr. Leonard Wohletz, USDA, told that fertilizer demonstrations in California were proving that there must be close coordination between the use of fertilizer and the conditioning of the soil itself.



Air view showing dryers and rock storage at Pierce, Florida, headquarters of A.A.C. phosphate mining operations. (Top) Sample of Florida Pebble Phosphate Rock, source of phosphorus widely used in the chemical industries, in its elemental form as well as in phosphoric acid, phosphates and phosphorus compounds. Q. This pebble rock is also the principal source of the most important—and most generally deficient—plant food element. Often called the Key to Life, phosphorus is essential in maintaining and improving crop yields. Health, growth, life itself, would be impossible without phosphorus . . . so in a way these phosphate pebbles are more precious than gold.

AA Quality...

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principal AA QUALITY products

All grades of Florida Pebble Phosphate Rock **AA QUALITY Ground Phosphate Rock**
All grades of Complete Fertilizers **Superphosphate**
Gelatin **Bone Products** **Salt Cake** **Ammonium Carbonate**
Sulphuric Acid **Fluosilicates** **Insecticides and Fungicides**
Phosphoric Acid and Phosphates **Phosphorus and Compounds of Phosphorus**

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GENERAL OFFICE: 50 CHURCH STREET, NEW YORK 7, N. Y.

31 FACTORIES AND SALES OFFICES, SERVING U.S., CANADA AND CUBA—ASSURE DEPENDABLE SERVICE

This talk was supplemented by that of H. D. Chapman, U of C Citrus Experiment Station, Riverside, who told how the list of elements formerly standing at 5 had grown to 10 as research had shown more clearly the need of California soils.

H. R. Krueger, Phillips Chemical, spoke on safety, and the essence of what he said you will find in the NFA story in this issue.

There was a banquet that night complete with floor show and the next day play began, except for those who chose to take the tour of Fresno State College farm.

As you can see, California takes its agriculture seriously, and the fertilizer folks are right in the middle of a sound constructive program.

Katy Railroad Movie Will Aid Farmers

The M.K&T Railroad has produced a motion picture, titled "Soil Fertility and Better Family Living" which it hopes will encourage better farming practices along its lines, which are largely in agricultural area.

Fertilizer Safety Officers Listed

The National Safety Council has announced that the officers for the Fertilizer sub-section of the Chemical section are: General Chairman, J. S. Fields, Phillips Chemical Company; vice-chairman, H. E. Smith, Spencer Chemical Company; secretary-treasurer, Vernon S. Gornto, Smith Douglass Company.

Allied Opens New Bag Plant

The Allied Paper Bag Corporation, manufacturers of specialty bags officially opened its new plant at 1701 Inverness Avenue, Baltimore, last month.

The new brick building, situated just inside the city line and about 300 yards off Washington Boulevard, a main truck thoroughfare, will permit wide expansion of Allied's production of glassine, cellophane, waxed and other types of paper bags of all sizes.

Exact Weight Bulletin Covers Sacking Scales

"Sack and Weight at the Same Time" is the title on the cover of Bulletin #3268, just issued by Exact Weight Scale Company, Columbus 8, Ohio. It will be sent to fertilizer plants requesting a copy. It covers well the flexibility and adaptability of the Exact Weight line of sacking scales to the fertilizer industry.

OBITUARIES

Mrs. John J. Daly, mother of Charles F. Daly, president of West Coast Fertilizer Co., died October 23 in Charleston, S. C.

Dr. William Lee Judefind, 55, assistant to the vice-president of operations, Davison Chemical, died suddenly November 14th in his office of a heart attack. He joined Davison in 1920.

Walton Elbert Mize, 50, plant office manager for Cotton States Fertilizer, Macon, Georgia, died October 24 in Macon, after being stricken while at work.

DAVIDSON-KENNEDY CO.

Is now manufacturing a complete line of fertilizer equipment in addition to their well established oil mill machinery business.

Cluster Hoppers
Foot Breakers
Elevating & Conveying Equipment
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DEPENDABLE FOR MORE THAN 60 YEARS

All Steel Self-Contained
Fertilizer Mixing and Bagging Units

Batch Mixers — Dry Batching

Pan Mixers — Wet Mixing

Tailings Pulverizers — Swing Hammer and Cage Type

Vibrating Screens

Dust Weigh Hoppers

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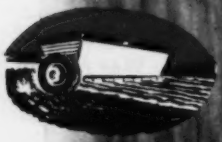
DAVISON

1. STORAGE CONTROL—will not cake or lump while in storage.



2. APPLICATION CONTROL—drills free and even . . . does not bridge over in the drill.

3. FOOD CONTROL—supplies uniform amount of plant food at desirable rates.

Davison's Granulated Superphosphate with 3-way control can mean added sales for you!

No longer is it necessary for you or the farmer to worry about lumping or caking . . . Davison's Granulated Superphosphate will store without becoming hard or caked. And when the farmer starts to apply Granulated Superphosphate in the field he will find there is no dusting nor will it bridge over in the drill. Granulated Superphosphate drills freely and evenly giving complete coverage. Because of the granular structure, plant food is released at desirable rates.

For added sales points be sure to get *Davison's Granulated Superphosphate with the 3-way control!*

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Mostly Personal

Hugh H. Bennett has retired after a lifetime of service to the farmers of America. He has headed the **Soil Conservation Service** since it was established in 1935, and the work of that agency has created an agricultural revolution in the Dust Bowl, the South—and as far away as Cuba, Central and South America. He has been called an evangelist, an inspired man. It has been said of him that he had his feet on more different acres in the US than any other man. His work is estimated to have increased by a fifth the farm incomes of the United States. And nationals from all over the world have been sent here to study under him.

* * *

Dr. Robert Salter, who has been head of USDA's Bureau of Plant Industry, will succeed Mr. Bennett.

* * *

Malcolm G. Chace has resigned as director of **International Paper,** and **Malcolm G. Chace, Jr.** has been elected to replace him. The father has served on International's board since 1922, and was for many years on the Executive Committee.

* * *

Frank Colban, promotion director for **W. R. Grace & Co.** and Fred Nelson, his assistant, were among those attending a two-day meeting at the home office of **Naco Fertilizer** in Charleston, S. C. to set up the 1952 advertising budget. The advertising agency, **Kelly, Nason,** was represented by **Ralph Cooney** and **Jordan Hargrove. W. F. O'Brien** is Naco's advertising director.

* * *

O. C. Minton, Naco vice-president in charge of the "push button" plant at Fort Pierce, Florida, destroyed by fire in early November is also chairman of the advertising committee of the **Florida Citrus Commission,** which was scheduled to meet the next day. Obviously, he didn't make it.

* * *

Jefferson D. Stewart, Jr., executive vice-president of **Federal Chemical Company,** Louisville, was elected president of the Middle West Soil Improvement Committee, at the annual meeting in Chicago.

* * *

M. S. Wright, president of **Texas Farm Products Co.,** producers of Lone Star fertilizers, was host to the East Texas Peace Officers Association at a barbecue in his home town of Nacogdoches.

* * *

George D. Green, president of Southern States Bag Company, Jacksonville, is home after a tour of European and Asiatic countries, and was impressed by the determination of Pakistan to make a great nation.

* * *

Louis Ware, president of **International Minerals & Chemical Corp.** has announced the re-election of all officers. **Robert L. Logan** has been made process engineer, and **Robert H. Berg** process control engineer for their engineering division.

Ernie E. Brown who has been elected vice-president of Arkell and Smith's. He has been in the paper industry for many years.

* * *

Douglas Kelly, Jr. has been named manager of chemical sales for the Western division of **Lion Oil,** according to **Leroy Donald,** sales manager of the Chemical Division.

* * *

Dr. Graham W. McMillan, with them since 1940, has been made manager of the new production development and quality control division of **Commercial Solvents.**

* * *

Boothe Ingram has been transferred from Opelika, Alabama to the Columbus Ohio, office of **Hammond Bag & Paper.**

DAVISON CHEMICAL ELECTIONS: Left, M. G. Geiger, to vice-chairman from executive vice-president; R. L. Hockley, who succeeds him, from marketing vice-president: J. Peter Grace, Jr., president of W. R. Grace & Co., who was elected a director.

CENTRAL WISCONSIN LEARNS FERTILIZER IS ANSWER TO WINTER FEEDING

By JOHN C. KADONSKY

Farmers in central Wisconsin have been faced with a feeding problem during the winter months for years. Winter after winter large portions of milk checks have been paid out to hay dealers from the southern part of the State in order that hay supplies could be replenished to last out the winter.

An answer to the problem was hit upon by the experts, a relatively simple answer—when put on paper. Farmers should raise alfalfa, a good-yielding, high-protein feed for dairy cattle. This would be the answer to the winter feeding problem. But as simple as the suggestion sounds, farmers in mid-state Wisconsin have found that alfalfa-raising is a science.

It's not just one of those crops that you sow, cultivate, and then harvest when the time comes. Alfalfa-raising in this region requires skillful application of proven scientific principles and the help of experts who have worked out the problems involved.

Several branch experiment stations, maintained by the University of Wisconsin in this dairy region of the State have made considerable progress in raising the highly-touted, rich-in-protein, alfalfa. And now they are educating farmers as to how they can raise it on their own farms.

Two such stations are the Marshfield Branch Experiment Station, located near Marshfield, Wis., and the experimental station at the Clark County Farm near Owen, Wis.

Special plots that have been worked for the past 10 years have revealed just what it takes to grow the coveted forage crop — alfalfa. Yields of more than four tons to the acre from two cuttings have been realized on these plots for several seasons.

Now, farmers in the area are beginning to sense that the idea may work and are showing an increased interest in the program. The University of Wisconsin soils department co-operates with county extension offices throughout Wisconsin in an effort to help farmers get their land in a high state of fertility and thus become successful in raising alfalfa.

This feed (alfalfa) has always been known to the farmers of the dairy belt in Wisconsin as an excellent feed. But efforts to raise it successfully ofter have been futile and new systems advanced that would supposedly guarantee an alfalfa crop have been scoffed at by area farmers for years.

But now, slowly, farmers are beginning to see crops of alfalfa grown and are investigating to find out how it is done. They are learning that testers, soil experts, county agricultural agents, and the university are promoting a soil fertility program that is profitable.

A good example of the promotional work being done to get the farmers interested and started on raising alfalfa is the set-up in Wood County.

Talking to more than 700 farmers gathered at Marshfield, Wis., for a grasslands institute in March, (March 16) I. J. Corey, Wood County agricultural agent, told the group the basic requirements of successful alfalfa-raising in their area.

"Most fields in this area need from 700 to 900 pounds of 0-10-30 fertilizer per acre to raise alfalfa," he said, "and this should be applied with the recommended amount of lime in two applications. Half of the amount recommended after the soil tests have been made, should be applied before the plowing is done and the rest later, making sure that both lime and fertilizer are well worked into the soil," Corey said.

Experts agree that one of the main problems encountered in past efforts to raise the high-protein crop was that either too little or too much fertilizer and lime had been applied. In the case of too little being applied, the ingredients often had not been worked into the soil thoroughly.

The group at the institute was told that 22 farmers in Wood County have signed up for assistance in the venture since last fall and more are getting plots in readiness for raising alfalfa.

As the county agent's office in this central Wisconsin county has the program set up, farmers who subscribe to the plan sign an agreement with the county agent to "follow his recommendations on liming, fertilizing, seed selection, and water control in order to grow good alfalfa." If the plan is successful the farmer further agrees to adopt these practices on all of his crops during the next five years.

In turn the county agent agrees to.

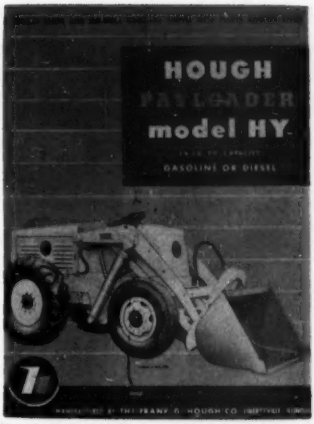
1. Help get the fields properly sampled and tested.
2. Give advice on the best methods of application of the lime and fertilizers.
3. Advise the farmer as to the right kind and amount of seed to sow.
4. Give assistance in securing materials and in drainage and water control problems.
5. Help in securing money to finance the plan.
6. Give advice on curing and storing alfalfa hay or silage.

Are the farmers taking to this new idea of getting their land in a state of high fertility? Are they willing to try raising alfalfa on their farms? This is the story Gerald Johnson, a farmer in the Marshfield area, tells of his start on the soil fertility venture.

Johnson, who got started on the program through the co-operation of the University of Wisconsin and the Wood County extension office, says "I'm tired of buying feed for my cattle year after year and I've decided to do something about it." This year he will be raising a 10-acre patch of alfalfa under the program and with an expected yield of upwards of four tons per acre his feeding problem will be solved.

"Others are doing it, why can't I," Johnson asks. Here is his story:

"Last year I spent $200 for hay and $100 for pea silage to tide me over until summer. The year before I spent about $400 for hay for my cattle.



Front cover of the new catalog covering the newest of the Hough Payloaders, Model HY, a 1¼ cubic yard machine. Get a copy from your distributor or write The Frank G. Hough Company, 702 Seventh St. Libertyville, Ill.

"It was back in the real dry years of '33 and '34 that I first became interested in alfalfa as a feed," Johnson said.

"We had to buy hay those winters as usual and we got a hold of some alfalfa that was really good feed. I got to thinking how nice it would be if we could raise something like that around here.

"This last summer they had a field day for farmers interested in experimental plots, at the Clark County Farm near Owen. I arranged to go up there for the day and see just what they were doing with alfalfa.

"I learned that alfalfa could be raised around here if the soil was tested and the right combinations of lime and fertilizer were applied. The county agent arranged to have a project associate from the university soils department come to my farm and take samples of the soil. These were tested and a formula was worked out to let me know how much lime and fertilizer to apply.

"After the right applications were figured out, I began to go to work getting my field ready. A lot of water usually hung on the field and I had to go over the entire patch and put in terraces and drainage ditches. Too much water isn't good for alfalfa they say, and this drainage system will keep the field from getting too water-logged."

Johnson explained that the 10-arce plot had to be completely reworked and leveled. Drainage ditches and terraces had to be planned and arranged over the whole field. Water runways were gouged in strategic areas in adjoining fields to divert excess moisture from this particular area where the alfalfa would be raised.

Although the expected income from the project is gratifying, it takes quite a chunk of money to buy lime and fertilizer and to get the plots in condition for the initial year of alfalfa-raising. For this particular purpose, banks in this central Wisconsin region have agreed to a plan whereby farmers can get loans at three per cent interest to take part in the fertility project.

Bankers realize that if farmers raise their own feed they won't have to go out of the area or out of the State to buy it. Money that goes out of the area can't help anyone around here is the common sense theory behind their proposal.

For Johnson's particular plot being worked up to raise the valuable forage crop, the soil experts recommended that six tons of lime and 900 pounds of 0-10-30 fertilizer be applied to each acre of the field.

Half of the lime and fertilizer, which was applied by a bulk spreader attached to a truck, was put on the field and then worked into the soil with a disc. The remainder of the mixture was worked in after the fall plowing. One portion of Johnson's field required less lime because of a previous application in 1942.

Wood County Agent Corey assisted Johnson in getting information on purchases and with other problems in connection with the project.

The undertaking cost Johnson a maximum of $50 an acre for lime, fertilizer, and seed. For his field this would total about $550 to get it in shape to raise the crop.

While the outlay for fertilizer and labor in getting a field in order for rasing alfalfa may seem slightly high to some farmers, it must be remembered that in future years the cost of maintaining the field will be much less.

Fields that are low in fertility, as Johnson's was, must be completely reworked the first year to expect a good crop yield.

Many lucky farmers possess fields with natural drainage systems and need not expend time and money to work up an elaborate drainage plot.

Still others have acreage that has been treated with commercial fertilizer and lime in years past and while it has not kept the field in proper condition to raise alfalfa, it needs less of the recommended fertilizer to prepare it for a successful crop.

Johnson worked up the drainage system on his field. He was able to hire the town road grader to use in cutting the water runways. The Wood County Soil Conservation Service planned the drainage system and the terracing for the plot.

A seed mixture for farmers in the area who planned on raising alfalfa under the prescribed set-up has been worked out by Russell Johannes, superintendent of the Marshfield Branch Experiment Station. This mixture will eventually be stocked by all commercial mills in the area.

The formula calls for eight pounds of alfalfa, half cossack and half ladak, six pounds of brome, and two of red clover per acre. Best results are found to be obtained from certified northern-grown seed from Montana and Minnesota.

Northern-grown seed is recommended because it is able to withstand the cold weather in Wisconsin better than the southern types. Information on this mixture is given to farmers by Johannes at the experiment station or by Corey at the county extension office.

Crop experts know that alfalfa requires a fertilizer that is high in potash content. After the alfalfa crop has been raised for two years on the present plot at Johnson farm, a top dress of straight potash fertilizer will be used.

Manure on the Johnson farm goes right onto the field and is not allowed to accumulate in the barnyard. It is estimated by soil scientists that much of the ingredients used on the fields to raise crops ultimately reaches the manure of the farm animals and is very valuable as a fertilizer.

As high as one-half of the amount initially put on the field can be recovered by prompt distribution of the manure on the plots, experts say.

Johnson says that he will be satisfied with less than the expected four tons of alfalfa per acre. But even if his yield is below average, "it will solve my feeding problem," he stressed.

Diamond's Kolker Subsidiary Makes Trichlorobenzene

Diamond Alkali Company, Cleveland, has announced that its subsidiary, Kolker, have started production of technical trichlorobenzene at their Houston, Texas, plant. Kolker specializes in farm chemicals, and the new production is expected to alleviate the shortage which has existed in this chemical for some time.

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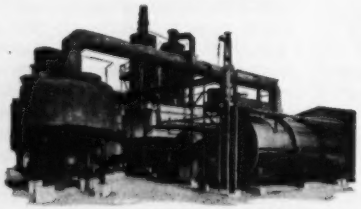

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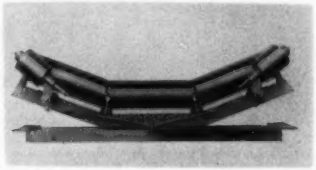
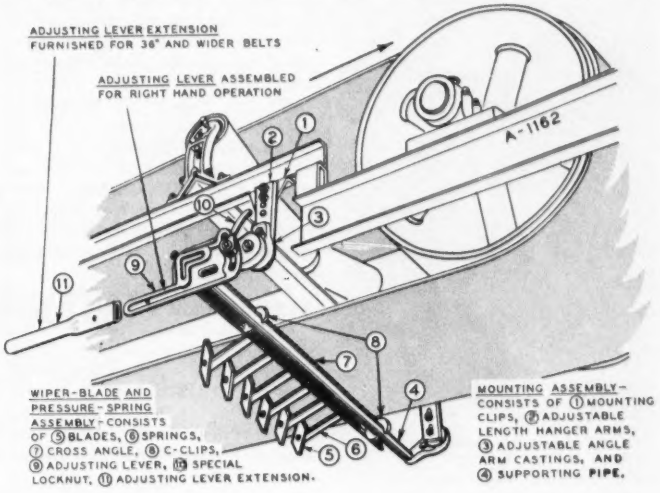
At a recent meeting of the Diamond Alkali stockholders, approval was given to a plan to finance the long-range program of expansion and diversification, including a $25,000,000 preferred stock issue. Of this not more than $12,000,000 will be offered this month or early 1952, if money market conditions are favorable.



Among the many standard and special carriers described in the new belt conveyor carrier catalog issued by Stephens-Adamson Manufacturing Company of Aurora, Illinois, Los Angeles, California, Belleville, Ontario, is the belt training carrier shown above. For information and the complete Stephens-Adamson belt conveyor carrier line write for Bulletin 2-C to Stephens-Adamson Mfg. Co. Aurora, Illinois.

The diagram shows the operation of the Stephens-Adamson spring-tube conveyor belt cleaner. Self-aligning spring steel wiper blades, perpendicular to the belt surface but diagonal to belt travel, wipe the belt clean and dry as it passes. For full details write the company for bulletin 651. The address: Stephens-Adamson Mfg. Co. Aurora, Illinois.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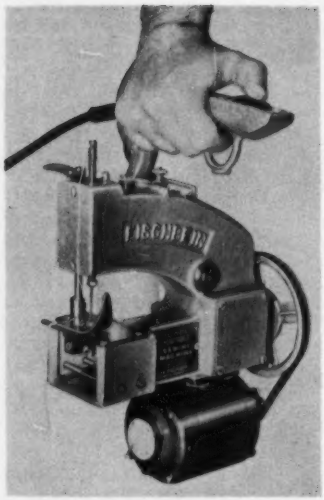

This portable electric sewing machine is produced by Dave Fischbein Co., 38 Glenwood Avenue, Minneapolis, makers of the Fischbein Portable Bag Closer. Model CH illustrated is specifically for closing bales, large containers and other hard-to-handle packages of cotton, burlap or paper, and will sew 40 ft. per minute. Write for full details.

NAC Again Sponsors Weed Killer Drums

National Agricultural Chemicals Association will again sponsor the marking of hormone-type weed killer drums during the ensuing season, according to Executive Secretary Lea S. Hitchner. Containers used for 2,4-D and 2,4,5-T are included in the plan. Until present stocks are exhausted, Mr. Hitchner says, some unmarked drums may appear, and with the shortage of drums, re-use becomes more important than last year. Drums used for hormone-types should never be used for any other farm chemical.

SASI Announces New Officers

The new president of The Southern Association of Science and Industry, Dr. M. P. Etheredge, is well-known throughout the nation for his work in the field of agricultural chemicals. He is the current president of the Association of American Food Control Officials, and has previously served as president of the Food and Drug Officials of the South Central States. He has been active in such fields as cottonseed oil and fertilizer manufacturing, water pollution abatement, and investigation of sugar, straches, and other foods.

Southern Lead Burning Company, Atlanta, Georgia are now perpared to line tanks and processing equipment with Polyethylene, which is being used in the handling of nitric, sulphuric, muratic, hydrofluoric and other chemicals. Picture shows operator flame-spraying.

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OPS SETS ASIDE EFFECTIVE DATE OF CPR 22 FOR OUR INDUSTRY

November 29, OPS head DiSalle signed an amendment to Supplementary Regulation 12 to CPR 22, which relieves our industry of the necessity of complying with CPR 22. You need not file Form 8 by December 19.

This means that you have the option of using General Ceiling Price Regulation prices until further action by OPS, and in view of the expectation that the promised tailored order is now expected to appear January 1, 1952 you can avoid the double burden of computing ceiling prices under CPR 22 and then shortly afterward under the tailored regulation.

The amendment applies to Superphosphate and mixed fertilizers, Synthetic sulphate of ammonia, Synthetic nitrate of soda, Ammonium nitrate, Ammonium nitrate-lime compound, Urea compounds, Urea-ammonia liquors, Nitrogen solutions, Anhydrous ammonia, Synthetic ammoniacal liquors.

Last Minute News

Just as we went to press the following items were in hand:

Theodore P. Walker, former president and chairman of **Commercial Solvents** died of a heart attack November 28.

C. H. Crain has come back from the Marines and has rejoined **Bagpak Division,** International Paper, assigned to Baltimore office.

John Stoddard has been made salesmanager of **John Powell & Co. Paul Williams** has been promoted to sales representative and has been assigned to the Southeastern territory, with headquarters at Huntsville, Ala.

William J. Brinkworth has been appointed as representative, distributor sales for **Link Belt Company,** with headquarters at their Houston, Texas, plant.

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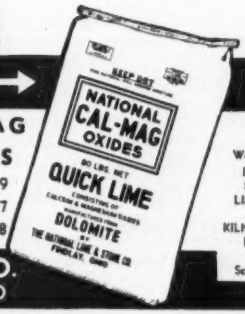

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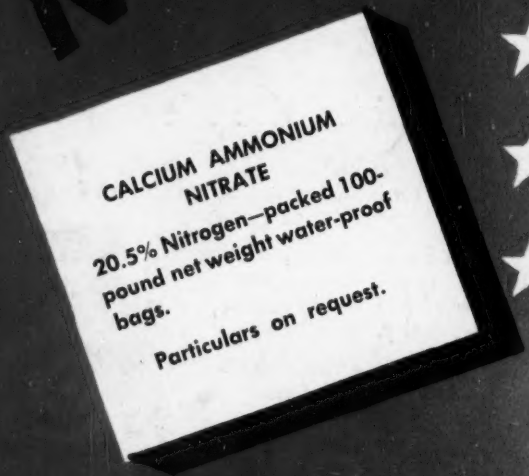

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